

LIGHTING FIXTURE SCHEDULE									
ALL LIGHTING FIXTURES ARE SUPPLIED BY CIRCLE K, INSTALLED BY THE ELECTRICAL CONTRACTOR									
TYPE	ITEM TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	VOLTAGE	COMMENTS	COUNT
A	INTERIOR LIGHTING	2x4' H.E. TROFFER	CREE	RLA-FLX24-50L-940-CRV-10V10-UNV	LED	41 W	120 V		28
AE	INTERIOR LIGHTING	2x4' H.E. TROFFER WITH BATTERY	CREE	RLA-FLX24-50L-940-CRV-10V10-UNV-EB	LED	41 W	120 V	WITH EMERGENCY BALLAST	6
B	INTERIOR LIGHTING	6" RECESSED DOWNLIGHT	CREE	RLA-LR6X-18L-40K	LED	21 W	120 V		17
C	INTERIOR LIGHTING	2x2' H.E. TROFFER	CREE	RLA-FLX22-40L-940-CRV-10V10-UNV	LED	33 W	120 V		10
CE	INTERIOR LIGHTING	2x2' H.E. TROFFER WITH BATTERY	CREE	RLA-FLX22-40L-940-CRV-10V10-UNV-EB	LED	33 W	120 V	WITH EMERGENCY BALLAST	2
J	INTERIOR LIGHTING	8' LED LINEAR FIXTURE	CREE	RLA-LS8-120L-950-R-UL-10V	LED	92 W	120 V		2
A2	EXTERIOR SITE LIGHTING	SINGLE MEDIUM EXTERIOR POLE FIXTURE	CREE	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-2M-UL-NM-XX	LED	104 W	120 V		3
A3	EXTERIOR SITE LIGHTING	SINGLE MEDIUM EXTERIOR POLE FIXTURE	CREE	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-3M-UL-NM-XX	LED	104 W	120 V		2
A3B	EXTERIOR SITE LIGHTING	SINGLE MEDIUM EXTERIOR POLE FIXTURE	CREE	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-3M-UL-NM-XX + OSQ-BLSMF	LED	104 W	120 V		6
A4-2	EXTERIOR SITE LIGHTING	SINGLE MEDIUM EXTERIOR POLE FIXTURE	CREE	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-4M-UL-NM-XX	LED	104 W	120 V		1
A4B	EXTERIOR SITE LIGHTING	SINGLE MEDIUM EXTERIOR POLE FIXTURE	CREE	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-4M-UL-NM-XX + OSQ-BLSMF	LED	104 W	120 V		4
INV	EXTERIOR SITE LIGHTING	EMERGENCY BATTERY BACKUP FOR EXT LIGHTS - 90 MIN	DUAL-LITE	LG125T1AO	LED	21 W	120 V		1
L	EXTERIOR SITE LIGHTING	64" 24-VOLT LED TAPE	GETC	FLEXP0D 64" CUSTOM CUT	LED	44 W	120 V	B-OBSS1A-09624-HE QUICKBOX SLIM POWER SUPPLY	9
WP3	EXTERIOR SITE LIGHTING	EXT. WALL PACK ("EM" - INVERTER BACK-UP)	CREE	XSPW-B-WM-4ME-6L-40K-UL-XX	LED	47 W	120 V		3
WP4	EXTERIOR SITE LIGHTING	EXT. WALL PACK ("EM" - INVERTER BACK-UP)	CREE	XSPW-B-WM-4ME-8L-40K-UL-XX	LED	47 W	120 V		4
EM	EMERGENCY LIGHTING	LED EMERGENCY DUAL HEAD	LIGHTALARMS	RLA-LCA-2LED	LED	12 W	120 V		2
EX	EMERGENCY LIGHTING	LED EXIT SIGN / EMERGENCY LIGHT COMBO	LIGHTALARMS	RLA-UQLXN500X-2LED	LED	12 W	120 V		3
W	EMERGENCY LIGHTING	WET-LISTED EMERGENCY REMOTE DUAL HEAD	THOMAS & BETTS DORVAL, QUEBEC	CAM-SD-XX	LED	10 W	120 V	(2) 1W HEADS GRAY FINISH	1
CAN	CANOPY LIGHTING	CANOPY LIGHT	CREE	CPY250-C-13L-57K7-F-UL-DM-XX	LED	86 W	208 V	CANOPY LIGHT	28
D		4' GASKETED WRAP AROUND	CREE	RLA-WS4-C-40L-LRA-40K-8-UL	LED	30 W			1

ELECTRICAL SYMBOLS LEGEND			
(SYMBOLS APPLY ONLY WHEN USED ON DRAWINGS)			
SYMBOL	DESCRIPTION		
	LIGHT FIXTURE (WALL MOUNTED/CEILING MOUNTED)		
	LIGHT FIXTURE		
	LIGHT FIXTURE, NIGHT LIGHT		
	EXIT SIGN, WITHOUT OR WITH INTEGRATED EMERGENCY LIGHTING (WALL MOUNTED/CEILING MOUNTED)		
	EMERGENCY LIGHT (WALL MOUNTED/CEILING MOUNTED)		
	EMERGENCY POWER INVERTER		
	CEILING MOUNTED LINE VOLTAGE PHOTOCCELL SENSOR, LEVITON "PCCSD-W" OR EQUAL.		
	CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR, LEVITON ODC05-MDW OR EQUAL.		
	STANDARD 20A, SINGLE PHASE SPST TOGGLE SWITCH		
	3-WAY SWITCH		
	KEYED SWITCH		
	DIMMER SWITCH, SINGLE PHASE SLIDING TYPE SWITCH. LUTRON "NOVA-T" SERIES OR APPROVED EQUAL. PROVIDE SEPARATE NEUTRAL FOR EACH DIMMER CIRCUIT.		
	MANUAL MOTOR SWITCH		
	SINGLE POLE OCCUPANCY SENSOR SWITCH		
	DOUBLE POLE OCCUPANCY SENSOR SWITCH		
	STANDARD 20A, 120V 1PH GROUNDING TYPE SIMPLEX RECEPTACLE		
	STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE		
	STANDARD 20A, 120V 1PH GROUNDING TYPE QUADRUPEX RECEPTACLE		
	STANDARD 20A, 120V 1PH GROUNDING "GROUND FAULT INTERRUPTER" GFI RECEPTACLE		
	STANDARD 20A, 120V 1PH ISOLATED GROUND TYPE DUPLEX RECEPTACLE, ORANGE IN COLOR		
	STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE MOUNTED IN FLUSH FLOOR OUTLET BOX		
	STANDARD 20A, 120V 1PH GROUNDING TYPE QUADRUPEX RECEPTACLE MOUNTED IN FLUSH FLOOR OUTLET BOX		
	SPECIAL RECEPTACLE - VERIFY NEMA CONFIGURATION WITH INSTALLED EQUIPMENT MANUFACTURER REQUIREMENTS.		
	JUNCTION BOX. SIZED BY THE CONTRACTOR PER ACTUAL NUMBER OF CONDUITS AND / OR CONDUCTORS PASSING THROUGH. (WALL MOUNTED/CEILING MOUNTED)		
	CEILING MOUNTED RECEPTACLE, STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE		
	DISCONNECT SWITCH, AMPS, POLES AND FUSE SIZE AS SHOWN (FUSE SIZE CALLED OUT IF REQUIRED)		
	FLUSH MOUNTED PANELBOARD, REFERENCE PANEL SCHEDULE FOR RATINGS AND COMPONENTS		
	SURFACE MOUNTED PANELBOARD, REFERENCE PANEL SCHEDULE FOR RATINGS AND COMPONENTS		
	SMOKE DETECTOR / DUCT SMOKE DETECTOR		
	HORN / STROBE, CANDELA AS INDICATED, COORDINATE WITH FIRE ALARM PLANS		
	TELEPHONE OUTLET WITH (2) RJ45 PORTS U.O.N., PROVIDE 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED		
	DATA OUTLET WITH (2) RJ45 PORTS U.O.N., PROVIDE 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED		
	COMBINATION TELEPHONE / DATA OUTLET WITH (4) RJ45 PORTS U.O.N., PROVIDE (2) 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED		
	SECURITY CAMERA BY OTHERS.		
ABBREVIATIONS			
a, b, c	LOWER CASE LETTERS INDICATE SWITCHING CONFIGURATION	LCU	LIGHTING CONTROL UNIT
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	REC	REFRIGERATION
C	CONDUIT		ELECTRICAL
CCT	CIRCUIT		CONTRACTOR
CF	CEILING FAN	RC	REFRIGERATION
CW	CASH WRAP		CONTRACTOR
EC	ELECTRICAL CONTRACTOR	RH	RADIANT HEATER
EF	EXHAUST FAN	SC	SECURITY CAMERA
ETR	EXISTING TO REMAIN	TR	TAMPER RESISTANT
EWC	ELECTRIC WATER COOLER	TYP	TYPICAL
G	GROUND	UH	UNIT HEATER
GFEP	GROUND FAULT EQUIPMENT PROTECTION	UNO	UNLESS NOTED OTHERWISE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	WH	WATER HEATER
		WP	WEATHER PROOF
IG	ISOLATED GROUND	WR	WEATHER RESISTANT

**CODE COMPLIANCE INFORMATION**

2020 NORTH CAROLINA ELECTRICAL CODE  
2018 NORTH CAROLINA BUILDING CODE  
2018 NORTH CAROLINA FUEL GAS CODE  
2018 NORTH CAROLINA FIRE CODE  
2018 NORTH CAROLINA ENERGY CONSERVATION CODE



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REVISION

ISSUE	DATE
OTF	02/15/23



PROFESSIONAL IN

JCA  
PROJECT  
SAG  
QUALITY  
SAG  
DRAWN  
LHO

PROJECT

CIRCLE K  
STORES, INC.

ANGIER, NC

9706 KENNEBEC CHURCH ROAD,  
ANGIER, NC

PROTOCYCLE# R1.2 12/XX/22



CIRCLE K STORE  
PROJECT NUMBER: 22130

ELECTRICAL  
COVER SHEET  
AND LEGEND

E0.0



#### 1. SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS

- A. THE WORK OF EACH OF THE ELECTRICAL SECTIONS INCLUDES FURNISHING AND INSTALLING THE MATERIAL, EQUIPMENT, AND SYSTEMS COMPLETE AS SPECIFIED AND/OR INDICATED ON THE DRAWINGS. THE ELECTRICAL INSTALLATIONS, WHEN FINISHED, SHALL BE COMPLETE AND COORDINATED, READY FOR SATISFACTORY SERVICE.
- B. THE WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE AND OTHER LOCAL CODES, THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE AND THE 2010 ADA STANDARDS.
- C. THE CONTRACTOR SHALL MAKE APPLICATION AND PAY FOR ALL PERMITS, LICENSES AND INSPECTIONS AS REQUIRED UNDER THE ABOVE CODES.
- D. THE GENERAL ARRANGEMENT OF CONDUIT, WIRING AND EQUIPMENT SHALL BE AS IDENTIFIED ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE SITE, STRUCTURAL, AND FINISH CONDITIONS AFFECTING HIS WORK AND SHALL ARRANGE SUCH WORK ACCORDINGLY, PROVIDING SUCH FITTINGS AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.
- E. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SERVICES NECESSARY FOR AND REASONABLY INCIDENTAL TO THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK AND RELATED SYSTEMS AS INDICATED ON THE DRAWINGS OR AS NECESSARY TO PROVIDE A COMPLETE SYSTEM.
- F. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY WIRING, LIGHTING AND CONSTRUCTION POWER FOR ALL TRADES AS REQUIRED TO COMPLETE THE PROJECT.
- G. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND COMPLETED IN A FIRST CLASS WORKMANLIKE MANNER. ALL MATERIALS SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS. ALL EQUIPMENT AND SYSTEMS SHALL BE APPROVED BY UL OR SIMILAR NATIONALLY ACCEPTED TESTING AGENCY SUCH AS ETL TESTING LABORATORIES.
- H. THE CONTRACTOR SHALL VISIT THE SITE AND OBSERVE THE CONDITIONS UNDER WHICH THE WORK SHALL BE COMPLETED. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONTRACT FOR ANY ERROR OR NEGLIGENCE IN THE CONTRACTOR'S PART.
- I. THE CONTRACTOR SHALL SUBMIT DETAILED DIMENSIONED SHOP DRAWINGS, TOGETHER WITH WIRING DIAGRAMS, SPECIFICATIONS, OPERATING DATA, AND/OR CATALOG CUTS FOR ALL EQUIPMENT.
- J. A THOROUGH TEST SHALL BE MADE PRIOR TO ENERGIZING THE SYSTEM TO DEMONSTRATE THAT THE SYSTEM IS ENTIRELY FREE FROM GROUND FAULTS, SHORT CIRCUITS, AND OPEN CIRCUITS; THAT THE RESISTANCE TO GROUND OF ALL NON-GROUNDED CIRCUITS, BEFORE AND AFTER CONNECTION OF EQUIPMENT MEETS THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND IEEE STANDARDS/RECOMMENDATIONS.
- K. IDENTIFY ALL MOTOR STARTERS, SWITCHES, CONTROLS, PANELBOARDS, SWITCHBOARDS, TERMINAL BOARDS, CONTROL CENTERS AND OTHER EQUIPMENT. IDENTIFICATION PLATES SHALL BE LAMINATED PLASTIC, BLACK AND WHITE ENGRAVED LETTERS. LETTERING FOR CONTROL CENTERS, CONTROL PANELS, METERING AND INSTRUMENT PANELS SHALL BE 3/8" HIGH.
- L. THE MATERIAL AND WORKMANSHIP OF ALL PARTS OF THE ELECTRICAL INSTALLATION SPECIFIED HEREIN SHALL BE GUARANTEED UNCONDITIONALLY FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY OR GRAND OPENING, WHICH EVER COMES FIRST.
- M. UPON COMPLETION OF THE ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL DELIVER TO THE OWNER ONE SET OF SCANNED DIGITAL PRINTS OF ELECTRICAL CONTRACT DRAWINGS WHICH SHALL BE LEGIBLY MARKED IN RED TO SHOW ALL ADDITIONS, CHANGES AND DEPARTURES OF THE INSTALLATION AS COMPARED WITH THE ORIGINAL DESIGN. THEY SHALL BE SUITABLE FOR USE IN PREPARATION OF RECORD DRAWINGS.
- N. THE CONTRACTOR SHALL PREPARE A RECORD AND INFORMATION MANUAL. THE MANUAL SHALL BE SCANNED INTO A DIGITAL FORMAT AND FORWARDED TO CIRCLE K CONSTRUCTION. PROVIDE THE FOLLOWING DATA IN THE RECORD AND INFORMATION MANUAL:
- CUT SHEETS OF ALL EQUIPMENT WITH TECHNICAL SPECIFICATIONS.
  - OPERATION AND MAINTENANCE PROCEDURES.
  - SERVICING INSTRUCTIONS.
  - COPIES OF PANELBOARD DIRECTORIES.
  - COPIES OF WARRANTIES.
  - LIST OF LAMPS SHOWING QUANTITY, TYPE, WATTAGE, MANUFACTURER, CATALOG NUMBER, ETC., FOR EACH FIXTURE TYPE.
  - COPIES OF TEST REPORTS.
- O. EXACT LOCATIONS OF OUTLETS SHALL BE COORDINATED WITH DOOR SWINGS AND VARIOUS PROTRUSIONS. MOUNTING HEIGHTS OF THE VARIOUS ELECTRICAL DEVICES SHALL BE AS FOLLOWS:
- |                        |  |
|------------------------|--|
| SWITCHES               | 46" AFF TO CENTER OF BOX   |
| RECEPTACLES            | 20" AFF TO CENTER OF BOX   |
| TELEPHONE OUTLETS      | 20" AFF TO CENTER OF BOX   |
| EXIT LIGHTS            | CENTERED BETWEEN CEILING AND TOP OF DOOR (UP TO 1'-0" ABOVE DOOR), SURFACE OR CEILING MOUNTED AS SHOWN |
| DISCONNECTING SWITCHES | 52" AFF TO CENTER OF SWITCH  |
- P. PROVIDE A DISCONNECT SWITCH FOR EACH MOTOR AS SHOWN ON THE DRAWINGS SIZED AS REQUIRED TO MEET THE NEC AND PROVIDE ALL WIRING CONNECTIONS FROM SOURCE. PROVIDE REQUIRED VOLTAGE.
- Q. SEAL ALL CONDUIT PENETRATIONS THRU RATED WALLS AND FLOORS TO MAINTAIN FIRE INTEGRITY. REFER TO ARCHITECTURAL DRAWING FOR FIRE WALL LOCATIONS.
- R. ELECTRICAL CONTRACTOR SHALL VERIFY ALL VOLTAGES OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

#### 2. SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

- A. INSTALL ALL WIRING CONDUIT EXCEPT AS OTHERWISE INDICATED. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUIT EMBEDDED IN CONCRETE SHALL BE 3/4" MINIMUM. INSTALL ALL CONDUIT CONCEALED UNLESS ON UNFINISHED WALLS, ON UNFURRED CEILINGS OR MECHANICAL EQUIPMENT SPACES. PROVIDE CONDUIT AS FOLLOWS:
- RIGID STEEL CONDUIT FOR WORK EXPOSED TO WEATHER OR EMBEDDED IN CONCRETE OR MASONRY.
  - GALVANIZED ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR EXPOSED WORK, CONCEALED WORK ABOVE SUSPENDED CEILINGS, AND WITHIN INTERIOR PARTITIONS OR NON-MASONRY WALLS.
  - FLEXIBLE METAL CONDUIT IN SHORT LENGTHS (6' MAXIMUM) FOR THE CONNECTION OF RECESSED LIGHTING FIXTURES AND MOTORS.
  - LIQUID TIGHT FLEXIBLE METAL CONDUIT WHEREVER MOISTURE MAY BE PRESENT AND MOTORS IN MECHANICAL EQUIPMENT SPACES.
  - POLYVINYLCHLORIDE (PVC) SCHEDULE 40 AND 80 CONDUIT WITH GROUND CONDUCTOR FOR UNDERGROUND OUTSIDE OF BUILDING (SITE) INSTALLATION AS PERMITTED BY 2008 NEC ARTICLE 352.
- B. INSTALL CONDUITS PARALLEL AND PERPENDICULAR TO WALLS AND INTERIOR SURFACES. CLEAN AND PLUG AND PROVIDE A PULL LINE IN EACH CONDUIT LEFT EMPTY. USE MANUFACTURED ELBOWS AND SCREW JOINTED CONDUIT FITTINGS. USE CAPPED BUSHINGS OR "PUSH PENNY" PLUGS. ALL FITTINGS SHALL BE STEEL OR MALLEABLE IRON. ALL EMT FITTINGS SHALL BE COMPRESSION TYPE.
- C. ALL OUTLET, SWITCH AND JUNCTION BOXES, SHALL BE STAINLESS STEEL BY STEEL CITY, RACO, APPLETON, VALEN, OR EQUIVALENT. OUTLET BOXES IN CONCRETE CONSTRUCTION SHALL BE OCTAGONAL. NO "THRU-WALL" BOXES SHALL BE USED IN PARTITIONS. ALL BOXES SHALL BE FURNISHED WITH APPROPRIATE COVERS.
- D. JUNCTION AND PULL BOXES SHALL BE FURNISHED AND INSTALLED AS INDICATED OR WHERE REQUIRED TO FACILITATE PULLING OF WIRES OR CABLES. BOXES FOR EXTERIOR WORK SHALL BE CAST ALUMINUM OR GALVANIZED CAST IRON TYPE WITH THREADED HUBS, UNLESS OTHERWISE DIRECTED. GASKETED COVER PLATES SHALL BE FURNISHED FOR OUTDOOR INSTALLATIONS.
- E. BUILDING WIRE, UNLESS OTHERWISE INDICATED, SHALL BE COPPER, 800 VOLT, TYPE THW/THHN INSULATION, #12 AWG MINIMUM, FOR INTERIOR AND EXTERIOR USE. FOR BRANCH CIRCUITS TYPE MC (METAL CLAD) CABLE MAY BE USED WHERE PERMITTED BY THE NEC AND LOCAL CODES. NO ROMEX OR AC (BX) CABLE WILL BE ALLOWED ON THE PROJECT.
- F. MINIMUM WIRE SIZE SHALL BE NUMBER TWELVE (12) AWG. NO SPLICES SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES. WIRES NUMBER EIGHT (8) AWG AND LARGER SHALL BE STRANDED. WIRES AND CABLES SHALL BE MANUFACTURED BY PIRELLI, ROYAL, TRIANGLE OR EQUIVALENT.
- G. THE COLOR CODING SYSTEM LISTED BELOW SHALL BE USED THROUGHOUT THE BUILDING:
- | SYSTEM   | PHASE A | PHASE B | PHASE C | NEUTRAL | GROUND | ISOLATED GROUND |
|----------|---------|---------|---------|---------|--------|-----------------|
| 120/208V | BLACK   | RED     | BLUE    | WHITE   | GREEN  | GREEN/YELLOW    |
| 277/480V | BROWN   | ORANGE  | YELLOW  | GRAY    | GREEN  | GREEN/YELLOW    |
- H. THE WIRE SIZE INDICATED IN THE HOMERUN SHALL BE USED THROUGH THE CIRCUIT.
- I. PROVIDE DISCONNECT SWITCHES WHERE INDICATED AND AS REQUIRED. SWITCHES SHALL BE OF SIZE, NUMBER OF POLES AND FUSED OR NONFUSED, AS REQUIRED FOR JOB CONDITIONS AND THE NATIONAL ELECTRICAL CODE. ALL SAFETY SWITCHES SHALL BE NEMA I ENCLOSURE "HD" WITH INTERLOCKING COVER AND HANDLE, MANUFACTURED BY SQUARE "D" OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURES WHERE REQUIRED.
- J. PROVIDE STARTERS AND CONTROL WIRING AS INDICATED ON THE DRAWINGS, OR SPECIFIED HEREIN. ALL TEMPERATURE CONTROL WIRING AND COMPONENTS SHALL BE UNDER DIVISION 15.
- K. PROVIDE THERMAL MANUAL MOTOR STARTING SWITCHES FOR FRACTIONAL HORSEPOWER, SINGLE PHASE MOTORS. THE STARTERS SHALL BE SQUARE D COMPANY, CLASS 2510, ALLEN BRADLEY BULLETIN 600, OR APPROVED EQUAL FOR SINGLE SPEED MOTORS. ENCLOSURES SHALL BE NEMA I FOR INTERIOR USE AND NEMA 3R FOR EXTERIOR USE.
- L. THREE PHASE MOTOR STARTERS SHALL BE 3 POLE, FULL-VOLTAGE, MAGNETIC TYPE. ENCLOSURES SHALL BE NEMA I FOR INTERIOR USE AND NEMA 3R FOR EXTERIOR USE. PROVIDE HOA SWITCH WHEN AUTOMATICALLY CONTROLLED, PILOT INDICATING LIGHT, CONTROL TRANSFORMER, AND NOINC AUXILIARY CONTACTS. STARTERS SHALL BE SQUARE D COMPANY, CLASS 8538 AND CLASS 8538 COMBINATION TYPE OR APPROVED EQUAL.

#### M. WIRING DEVICES SHALL BE ARROW HART, GENERAL ELECTRIC, P & S LEVITON OR HUBBELL:

- WALL SWITCHES: ARROW HART 1991. THREE AND FOUR-WAY SWITCHES SHALL BE OF THE SAME MANUFACTURER AND GRADE.
  - RECEPTACLES: ARROW HART 5362 FOR 20 AMPERES. GFCI SHALL BE #GFC20 RATED 20 AMPERE, 120 VOLT. PROVIDE TAMPER RESISTANT AND MOISTURE RESISTANT TYPE WHERE REQUIRED BY NEC.
  - DIMMERS: 600/1000/1500/2000 WATTS AS REQUIRED BY JOB CONDITIONS. LUTRON 'NOVA' SERIES OR EQUAL.
  - DEVICE PLATES: ARROW HART SWITCH PLATES SI-S6 SERIES. ARROW HART RECEPTACLE PLATES S8. ARROW HART TELEPHONE BLANK PLATES S14.
- N. MOUNT WEATHERPROOF DEVICES IN CAST METAL BOXES WITH GASKETED, SPRING-HINGED LID-TYPE LOCKING COVERS HAVING CORROSION-RESISTANT FINISH.
- O. THE ENTIRE ELECTRICAL SYSTEM SHALL BE SOLIDLY GROUNDED INCLUDING MAIN SERVICE EQUIPMENT, DISCONNECT SWITCHES, WIRING TROUGHS AND PULL BOXES, CONDUIT SYSTEM, OUTLET BOXES, MOTORS, ELECTRIC HEATING EQUIPMENT, LIGHTING FIXTURES, TRANSFORMERS, EMERGENCY SYSTEMS, UPS SYSTEMS, AND FIRE ALARM SYSTEMS.
- P. PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN ALL BRANCH CIRCUITS AND FEEDERS SIZED IN ACCORDANCE WITH THE NEC TABLE 250.112.
- Q. ALL BRANCH CIRCUITS SHALL BE RUN CONCEALED IN EXISTING AND NEW WALLS. CUT AND PATCH EXISTING WALLS AND SURFACES AS REQUIRED.
- R. ALL D.C. WIRING SHALL BE #10 AWG MINIMUM.
- S. GROUND, PHASE AND NEUTRAL CONDUCTORS SHALL BE PIG-TAILED IN OUTLET BOXES OR MULTI-OUTLET ASSEMBLY FOR RECEPTACLES SO THAT GROUND AND ELECTRICAL SERVICE WILL NOT BE DISRUPTED TO OTHER RECEPTACLES ON THE SAME MULTI-WIRE CIRCUIT IF RECEPTACLE IS REMOVED.

#### 3. SECTION 16400 - SERVICE AND DISTRIBUTION

- A. COORDINATE ALL SERVICE ENTRANCE WORK WITH THE ELECTRIC UTILITY.
- B. DISTRIBUTE POWER AT 120/208V, 3 PHASE, 4 WIRE. LED LIGHTING, AIR CONDITIONING, ELECTRIC HEATING, MOTOR CIRCUITS, AND 120/208V FOR RECEPTACLES, INCANDESCENT LIGHTS AND SMALL MOTORS.
- C. PANELBOARDS SHALL BE 120/208 VOLTS, THREE PHASE EMPLOYING BREAKERS MINIMUM 10,000 SYMMETRICAL A.I.C. AT 120 VOLTS. FURNISH PANELBOARDS AS INDICATED ON DRAWINGS E6.0, E7.0 AND E7.1.
- D. PANELBOARDS SHALL BE FACTORY ASSEMBLED WITH BOLT-ON TYPE CIRCUIT BREAKERS. BUSS SHALL BE ALUMINUM. PROVIDE 50% GROUND BUS BAR. PANELS CONNECTED TO K-RATED TRANSFORMERS SHALL HAVE 200% RATED NEUTRAL BUS BARS.
- E. PROVIDE THREE (3) 3/4 INCH SPARE CONDUITS FROM EACH RECESSED PANEL TO THE CEILING SPACE.
- F. FUSES FOR SERVICE ENTRANCE EQUIPMENT SHALL BE U.L. LISTED CLASS L, J, OR RK1. FUSES FOR FEEDER CIRCUITS AND PANELBOARDS SHALL BE U.L. CLASS RK1 FAST-ACTING TYPE. FUSES FOR MOTOR OVERCURRENT, MOTOR CONTROLLER, AND TRANSFORMER PROTECTION SHALL BE DUAL-ELEMENT, U.L. CLASS RK1 TIME-DELAY TYPE.
- G. PROVIDE ENERGY EFFICIENT, NEMA TP-1, SELF-COOLED, DRY TYPE TRANSFORMERS OF KVA, PHASE, "K" AND VOLTAGE RATINGS AS INDICATED. TRANSFORMERS 15 KVA AND LESS SHALL HAVE A CLASS F INSULATION, 115 DEGREES C RISE. TRANSFORMERS ABOVE 15 KVA SHALL HAVE CLASS H INSULATION, 115 DEGREE C RISE. PROVIDE FOUR 2-1/2 TAPS BELOW TWO 2-1/2 TAPS ABOVE RATED PRIMARY VOLTAGE. TRANSFORMERS OF 150 KVA AND LESS SHALL BE RATED 45 DB, LARGER TRANSFORMERS SHALL BE RATED 55 DB. NEUTRALS AND NEUTRAL CONNECTIONS OF ALL "K" RATED DRY TYPE TRANSFORMERS SHALL BE 200% OF THE PHASE CONDUCTOR SIZE. TRANSFORMER SHALL BE HEVI-DUTY ELECTRIC COMPANY, GENERAL ELECTRIC, SORGEL, ACME OR HOWARD INDUSTRIES.

#### 4. SECTION 16500 - LIGHTING

- A. PROVIDE A COMPLETE LIGHTING FIXTURE AT EACH LOCATION INDICATED ON THE DRAWINGS. FIXTURES SHALL BE SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE ON THE DRAWINGS.
- B. ALL PLASTIC DIFFUSERS SHALL BE 100 PERCENT VIRGIN ACRYLIC (NOMINAL .125 INCH THICK) AND ALL LEXAN DIFFUSERS SHALL BE LEXAN TYPE MR-4000, OR EQUAL.
- C. 8-FOOT TANDEM UNITS MAY BE USED IN LIEU OF 4 FOOT UNITS IN CONTINUOUS ROWS.
- D. THE CONTRACTOR SHALL CONSULT THE CEILING CONTRACTOR AND ARCHITECT'S DRAWINGS FOR APPROVED REFLECTED CEILING PLANS BEFORE ORDERING FIXTURES TO INSURE THAT ALL ARE COMPATIBLE WITH THE CEILING SYSTEM AND PROPERLY LOCATED. VERIFY THAT ADEQUATE CLEARANCE FOR INSTALLATION, MAINTENANCE, AND HEAT DISSIPATION IS AVAILABLE.
- E. PROVIDE A MINIMUM OF TWO (2) GALVANIZED STEEL #12 GAUGE HANGER WIRES (ALTERNATE CORNERS) ON ALL RECESSED FIXTURES.
- F. CONTRACTOR SHALL PROVIDE ADDITIONAL EXIT LIGHTS AND EMERGENCY BATTERY PACK WITH DUAL HEADS AS NEEDED TO MEET FIRE MARSHAL'S WALK-THROUGH AND ACCEPTANCE.
- G. CONNECT EXIT LIGHTS, EMERGENCY BATTERY UNITS AND NIGHT LIGHTS (NL) TO UNSWITCHED PORTION OF LIGHTING CIRCUIT SERVING RESPECTIVE AREA.

#### 5. SECTION 16700 - COMMUNICATION SYSTEMS

- A. TELEPHONE SERVICE SHALL BE INSTALLED BY THE TELEPHONE COMPANY.
- B. PROVIDE WALL OUTLETS IN 4" SQUARE 2-1/8" DEEP BOX WITH RAISED SINGLE GANG COVERS EQUIPPED WITH BLANK STAINLESS STEEL DEVICE PLATES. EXTEND 3/4" EMPTY CONDUIT FROM EACH OUTLET TO THE CEILING SPACE AND TERMINATE WITH INSULATED BUSHINGS. PROVIDE NYLON PULL WIRE IN ALL CONDUITS LEFT EMPTY.

Δ	ISSUE	DATE
OTF		02/15/23

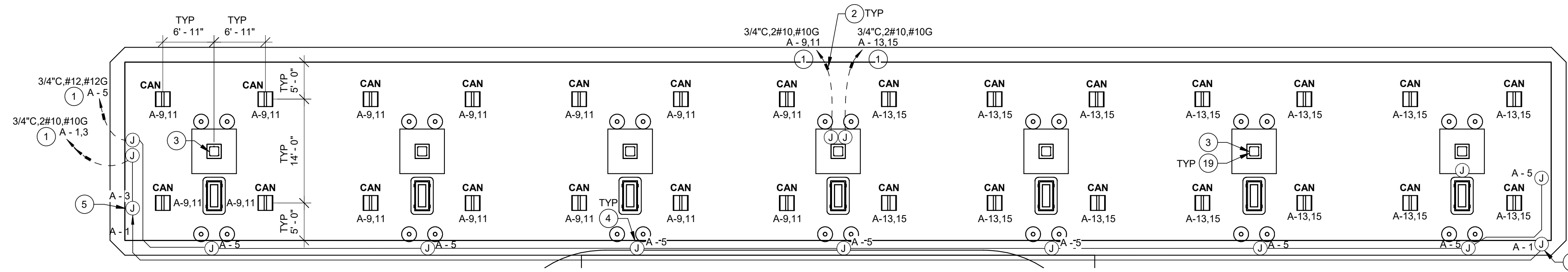


GENERAL NOTES

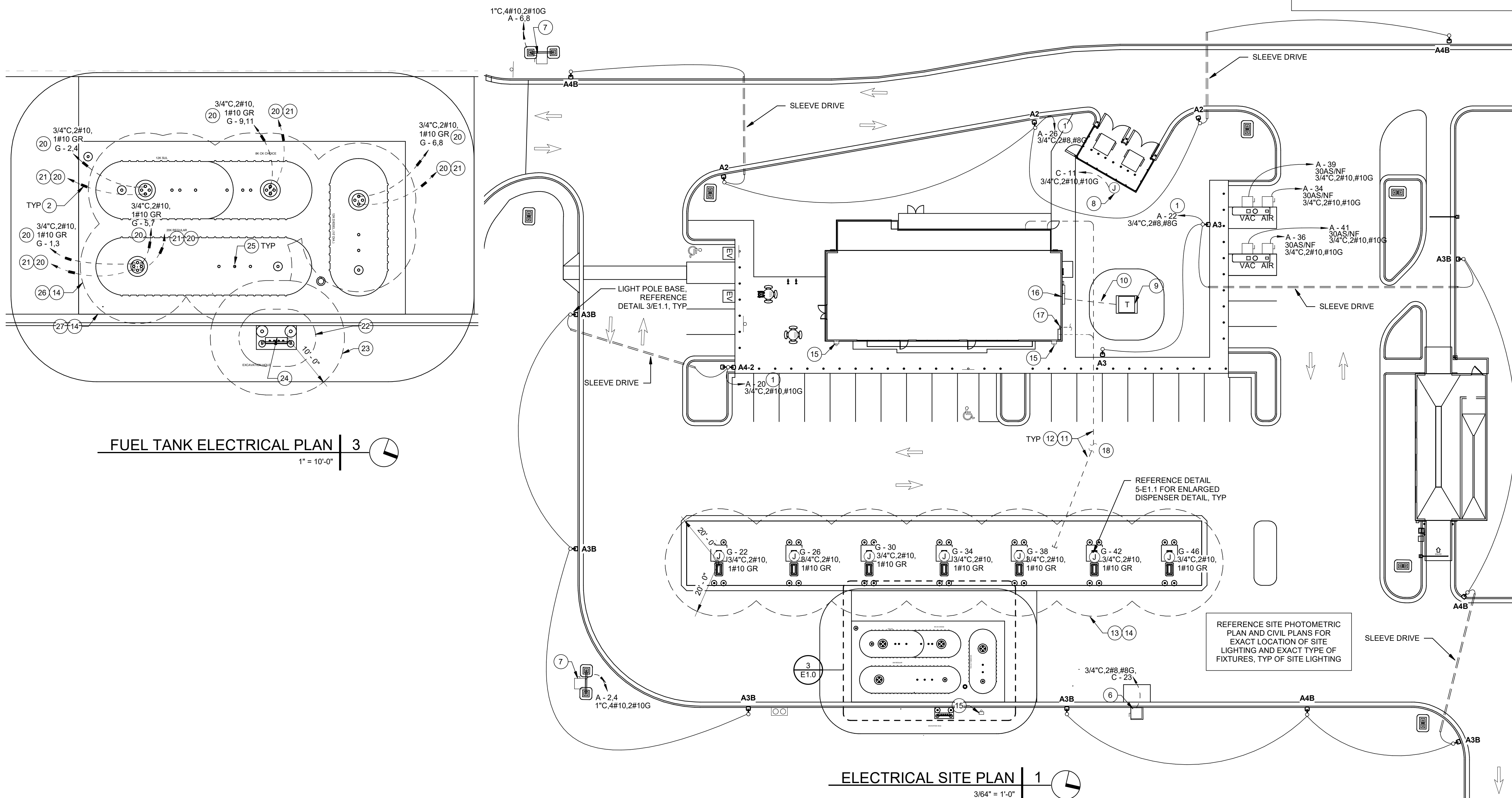
1. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF.
2. ALL FUEL ISLAND CONDUITS SHALL BE ROUTED TO THE RESPECTIVE PANELS AND / OR TO THE FUEL CONTROL PANELS LOCATED IN THE MANAGER'S OFFICE / STORAGE ROOM.
3. PROVIDE EMPTY CONDUITS WITH PULL STRING. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL UTILITY COMPANY FOR THE EXACT LOCATION OF ALL PRIMARY SERVICE EQUIPMENT, TRENCH LOCATIONS, TRANSFORMER LOCATION, METER LOCATION, ETC.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY SECONDARY CONDUITS, POWER TRENCHING, BACKFILL, CONCRETE PADS FOR TRANSFORMERS AND SERVICE EQUIPMENT AND CONDUIT STUBS INTO TRENCH AS REQUIRED BY ELECTRICAL UTILITY COMPANY SPECIFICATIONS.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE TELEPHONE UTILITY COMPANY FOR THE EXACT LOCATION OF ALL PRIMARY SERVICE EQUIPMENT, SERVICE EQUIPMENT, TRENCH LOCATIONS, ETC.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TELEPHONE TRENCHING, BACKFILL AND CONDUIT STUBS INTO TRENCH AS REQUIRED BY TELEPHONE UTILITY COMPANY SPECIFICATIONS.
7. ALL WIRING OUTSIDE SHALL BE A MINIMUM OF #10 COPPER WITH TYPE 'XHHW-2' INSULATION FOR UNDERGROUND CIRCUIT RUN IN PVC. PROVIDE A #10 COPPER BOND IN ADDITION TO CIRCUIT CONDUCTORS.
8. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND COMPLIANCE WITH THE UTILITY COMPANY'S REQUIREMENTS. WITHIN TWO WEEKS AFTER AWARD OF CONTRACT, SUBMIT (2) COMPLETE SETS OFF PLANS, INCLUDING PLOT OF SURVEY, TO UTILITY COMPANY FOR COORDINATION. ROUTING OF INCOMING POWER AND TELEPHONE SERVICE SHOWN ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL ROUTING, CONDUIT, TRENCH AND PAD REQUIREMENTS SHALL BE AS SPECIFIED BY THE UTILITY COMPANY. CONFIRM ALL REQUIREMENTS WITH UTILITIES PRIOR TO INSTALLATION.
9. ALL UNDERGROUND CABLE, PIPE AND CONDUITS SHALL BE DETECTABLE (METALLIC) OR HAVE A DETECTABLE UNDERGROUND DEVICE INSTALLED PER LOCAL CODES.

KEYNOTES

1. SITE LIGHTING CIRCUITS SHALL BE ROUTED VIA 20A ELECTRICALLY HELD LIGHTING CONTACTORS CONTROLLED BY THE 'EPO' SWITCHES AND PHOTOCELL 'EPO' SWITCHES LOCATED AT THE FUEL CANOPY AND STORE ON THE SITE. REFERENCE DETAIL 2/E6.0.
2. PROVIDE SEAL-OFF FITTINGS AT EACH END OF CONDUIT IN CONJUNCTION WITH / G.V.R. DISPENSER MANUAL. REFERENCE DETAIL 4/E1.1.
3. PROVIDE AND INSTALL WP JUNCTION BOXES IN CANOPY FOR WHITE SPEAKERS. MAKE CONNECTIONS TO CONDUITS PROVIDED IN CANOPY COLUMN.
4. CANOPY EYEBROW LED STRIP LIGHTS. ONE DOUBLE KWIK BOX POWER CONNECTION PER EACH GROUP OF FOUR SECTIONS.
5. WP JUNCTION BOX FOR COMPLETE CONNECTION OF CANOPY SIGN. VERIFY EXACT LOCATION IN FIELD.
6. PROVIDE WEATHERPROOF DISCONNECT SWITCH FOR WATER / AIR FILL STATION. VERIFY EXACT LOCATION IN FIELD, AND VERIFY REQUIREMENTS PRIOR TO ROUGH-IN.
7. PROVIDE WEATHERPROOF DISCONNECT SWITCH. COORDINATE EXACT CONNECTION AND WIRING REQUIREMENTS WITH SIGN CONTRACTOR AND FINAL SECTION PRIOR TO INSTALLATION. PROVIDE (2) 1" CONDUITS, ONE FOR POWER AND ONE FOR PHONE AND COMMUNICATION.
8. HEAT TRACE TO BE PROVIDED FOR BACKFLOW PREVENTER IN COLD REGION.
9. PROVIDE HOUSEKEEPING PAD FOR POWER CO. PAD MOUNTED TRANSFORMER PER UTILITY COMPANY REQUIREMENTS.
10. REFER TO ONE-LINE DIAGRAM FOR CONDUCTOR AND CONDUIT SIZES. VERIFY WITH POWER COMPANY.
11. FUEL DISPENSER CONDUITS FOR POWER, INTERCOM, CRIND DATA AND SENSORS. REFERENCE DETAIL 5/E1.1 AND FUEL SYSTEM VENDOR DRAWINGS.
12. (1) 3/4" CONDUIT AND (3) 1" CONDUITS FROM ELECTRICAL PANELS TO CLOSEST CANOPY COLUMN. ROUTE CONDUITS UP TO CANOPY DECK FOR SPEAKER/SECURITY CAMERA CONNECTIONS. PROVIDE PULL STRINGS IN ALL CONDUITS. REFERENCE ELECTRICAL VENDOR DRAWINGS FOR CONDUIT ENTRANCE LOCATIONS IN PANELS.
13. CLASS 1 DIVISION 2 HAZARDOUS AREA: OUTDOOR DISPENSING DEVICE: UP TO 18" OF DISPENSER ENCLOSURE, EXTENDING 20 FT. HORIZONTALLY IN ALL DIRECTIONS FROM DISPENSER ENCLOSURE. PER NEC TABLE 514.3(B)(1).
14. ALL WIRING IN THIS AREA INCLUDING BELOW GRADE SHALL BE INSTALLED IN RIGID CONDUIT PER NEC ARTICLE 514.8. HOWEVER, PER NEC 514.8 EXCEPTION 2, NONMETALLIC RIGID CONDUIT (PVC) HAVING A MINIMUM OF 24" OF GROUND COVER IS ALLOWED. IN ADDITION, THREADED RIGID METAL CONDUIT OR THREADED STEEL INTERMEDIATE METAL CONDUIT SHALL BE USED FOR THE LAST 2 FEET OF THE UNDERGROUND RUN TO EMERGENCY OR TO THE POINT OF CONNECTION TO THE ABOVE GROUND RACEWAY, AND AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INCLUDED. PROVIDE ALL EXPLOSION PROOF FITTINGS AND SEALS NECESSARY TO COMPLETE CONDUIT SYSTEMS. NO SUBSTITUTIONS SHALL BE MADE UNLESS APPROVED BY THE AUTHORITY HAVING JURISDICTION. PROVIDE EXPLOSION PROOF JUNCTION BOXES (CROUSE HINDS) MODEL GUP215 WITH 0302 0' RING OR OWNER APPROVED EQUAL.
15. "EMERGENCY POWER OFF" SWITCH PER NEC 2011, NEC ARTICLE 514.11. PROVIDE SIGNAGE PER IFC SECTION 2204, 2205 (VERIFY EXACT LOCATION WITH CIRCLE 'K' CONSTRUCTION MANAGER). ROUTE (1) 3/4" EMPTY CONDUIT WITH PULL STRING FROM EPO SWITCH TO SWITCHGEAR PANEL DP FUEL CONTROLS SECTION. REFERENCE ELECTRICAL VENDOR DRAWINGS FOR EXACT PANEL SECTION CONDUIT STUB UP LOCATION.
16. SERVICE ENTRANCE DISCONNECT PER UTILITY REQUIREMENTS
17. (2) 4" EMPTY CONDUITS FOR TELEPHONE SERVICE. VERIFY EXACT QUANTITY AND SIZE WITH SERVING TELEPHONE COMPANY.
18. STORE ELECTRICIAN SHALL ROUGH IN CONDUIT AT ELECTRICAL ROOM AND RUN TO PETROLEUM ELECTRICIAN'S POINT OF INTERCEPTION 30 FEET FROM FRONT OF STORE. PETROLEUM ELECTRICIAN SHALL INTERCEPT CONDUIT AND COMPLETE RUNS TO DISPENSERS, CANOPY AND FUEL TANKS. PETROLEUM ELECTRICIAN SHALL FURNISH AND INSTALL ALL WIRING. REFERENCE FUEL SYSTEM VENDOR DRAWINGS FOR ALL REQUIRED CONDUIT, WIRE AND CIRCUITRY.
19. CANOPY COLUMN GROUNDING: REFERENCE DETAILS 1 & 2/E1.1.
20. 3/4" CONDUIT FOR POWER/STP CONTROL. REFERENCE DETAIL 1/E1.0 FOR POWER CIRCUIT DESIGNATION, CONDUIT AND WIRE SIZE. PROVIDE #12 THWING FOR STP AUTHORIZATION. VERIFY STP AUTHORIZATION CONDUCTOR QUANTITY, SIZE AND TYPE PER DISPENSER WITH FUEL VENDOR DRAWINGS.
21. 3/4" CONDUIT FOR TANK MOTION SENSORS. INSTALL CONDUIT TO SUMP AND INTERSTITIAL SENSORS AT TANKS. REFERENCE FUEL SYSTEM VENDOR DRAWINGS FOR CONDUCTORS TO BE INSTALLED TO SENSORS.
22. CLASS 1 DIVISION 1 HAZARDOUS AREA: UNDERGROUND TANK VENT: WITHIN 5 FT. OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS. PER NEC TABLE 514.3(B)(1).
23. CLASS 1 DIVISION 2 HAZARDOUS AREA: UNDERGROUND TANK VENT: BETWEEN 5 FT. AND 10 FT. OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS. PER NEC TABLE 514.3(B)(1).
24. VENT RISERS FROM TANKS.
25. TANK FILL STATION.
26. CLASS 1 DIVISION 2 HAZARDOUS AREA: UNDERGROUND TANK FILL OPENING: UP TO 18" ABOVE GRADE LEVEL, EXTENDING 5 FT. HORIZONTALLY IN ALL DIRECTIONS FROM ANY LOOSE-FILL CONNECTION. PER NEC TABLE 514.3(B)(1).
27. CLASS 1 DIVISION 1 HAZARDOUS AREA: UNDERGROUND TANK: INSIDE TANK - ENTIRE INSIDE VOLUME. FILL OPENING - ENTIRE SPACE WITHIN ANY PIT OR BOX BELOW GRADE LEVEL. PER NEC TABLE 514.3(B)(1).



CANOPY LIGHTING PLAN | 2  
1" = 10'-0"



ELECTRICAL SITE PLAN | 1  
3/8\"/>

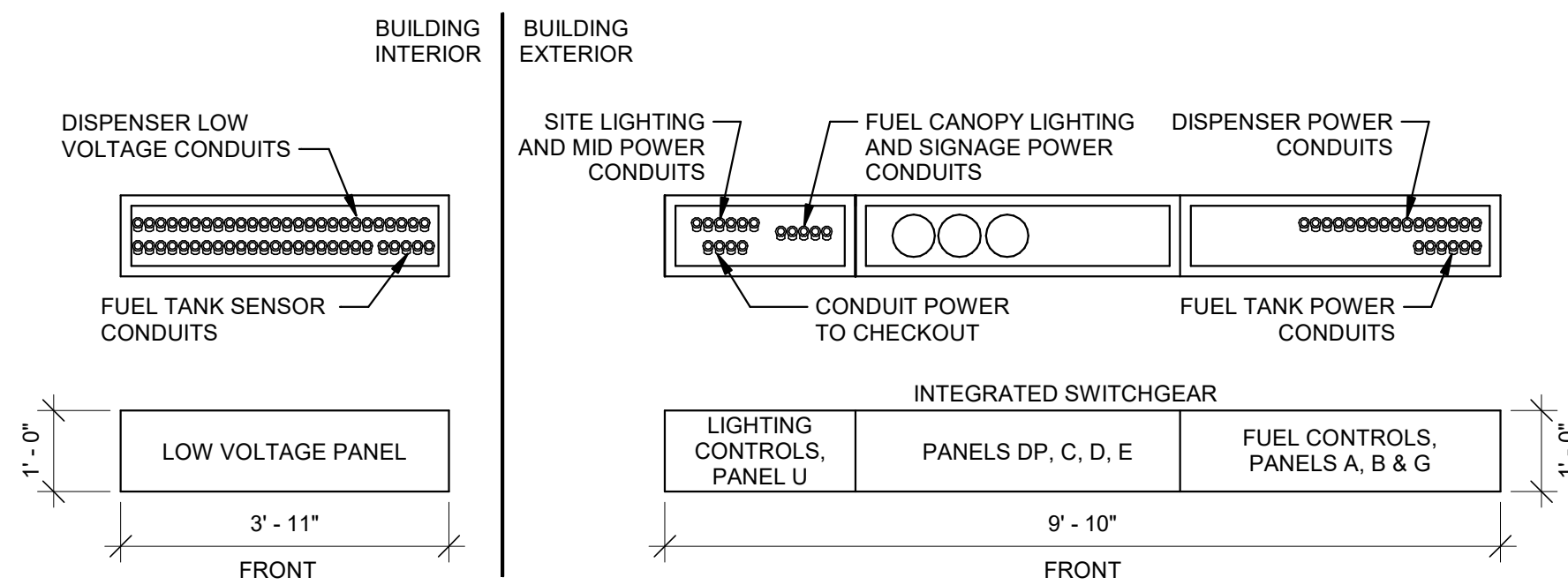
FUEL TANK ELECTRICAL PLAN | 3  
1" = 10'-0"



## KEYNOTES

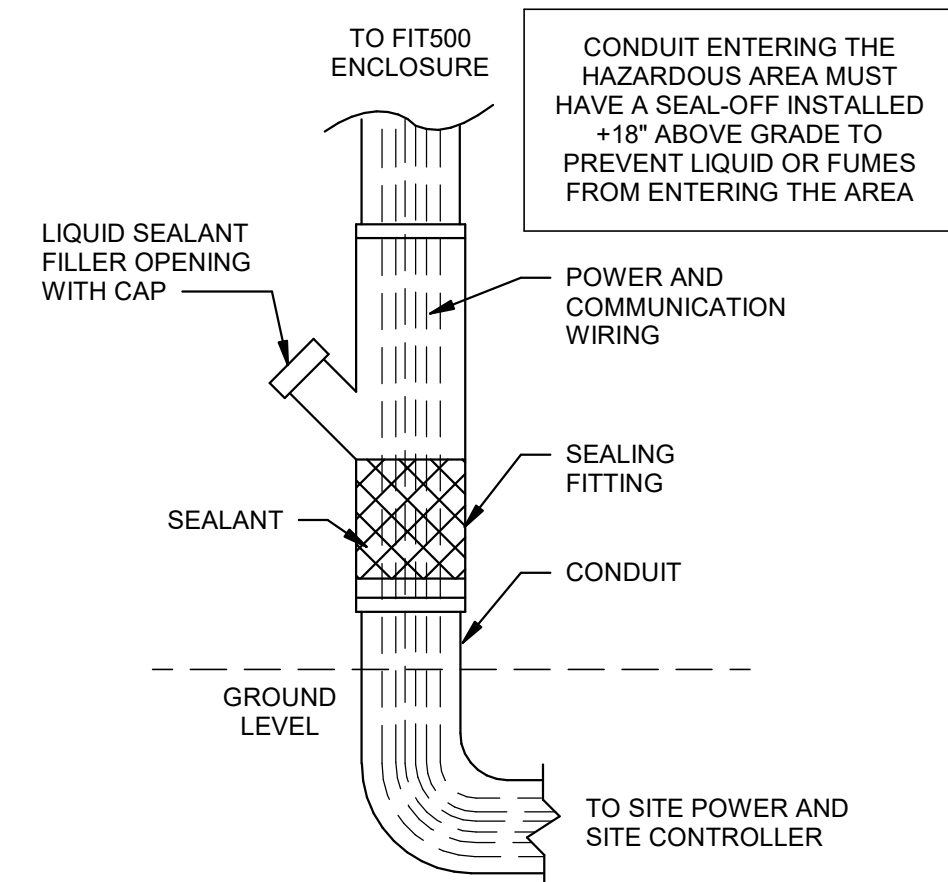
- 1 PROVIDE SEAL-OFF FITTINGS AT EACH END OF CONDUIT IN CONJUNCTION WITH / G.V.R. DISPENSER MANUAL. REFERENCE DETAIL 4/E1.1.
- 2 3/4" CONDUIT FOR POWER/STP CONTROL. REFERENCE DETAIL 1/E1.0 FOR POWER CIRCUIT DESIGNATION, CONDUIT AND WIRE SIZE. PROVIDE #12 THWN2 FOR STP AUTHORIZATION. VERIFY STP AUTHORIZATION CONDUCTOR QUANTITY, SIZE AND TYPE PER DISPENSER WITH FUEL VENDOR DRAWINGS.
- 3 3/4" CONDUIT FOR DISPENSER MONITORING SENSOR IN DISPENSER SUMP. REFERENCE FUEL SYSTEM VENDOR DRAWINGS FOR QUANTITY AND TYPE OF CONDUCTORS TO BE INSTALLED.
- 4 3/4" CONDUIT TO SWITCHGEAR LOW VOLTAGE SECTION FOR DISPENSER INTERCOM. REFERENCE FUEL SYSTEM VENDOR DRAWINGS FOR QUANTITY AND TYPE OF CONDUCTORS TO BE INSTALLED PER DISPENSER.
- 5 3/4" CONDUIT FOR CRIND DATA. REFERENCE FUEL SYSTEM VENDOR DRAWINGS FOR QUANTITY AND TYPE OF CONDUCTORS TO BE INSTALLED PER DISPENSER.

DETAIL IS DIAGRAMMATIC IN NATURE. REFERENCE FUEL VENDOR DRAWINGS FOR EXACT QUANTITY AND SIZE OF REQUIRED DISPENSER, TANK AND CANOPY CONDUITS. REFERENCE SWITCHGEAR VENDOR DRAWINGS FOR EXACT LOCATION OF CONDUIT ENTRY LOCATIONS IN SWITCHGEAR SECTIONS.



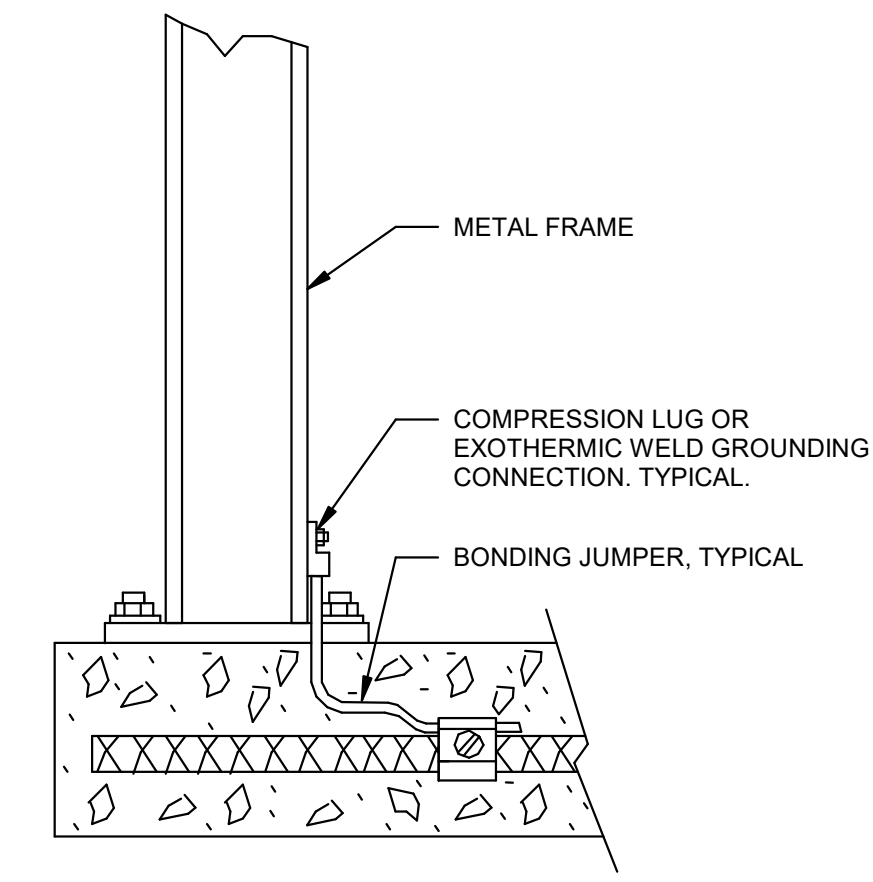
SITE FUEL EQUIPMENT CONDUIT ROUGH-IN | 6

1/2" = 1'-0"



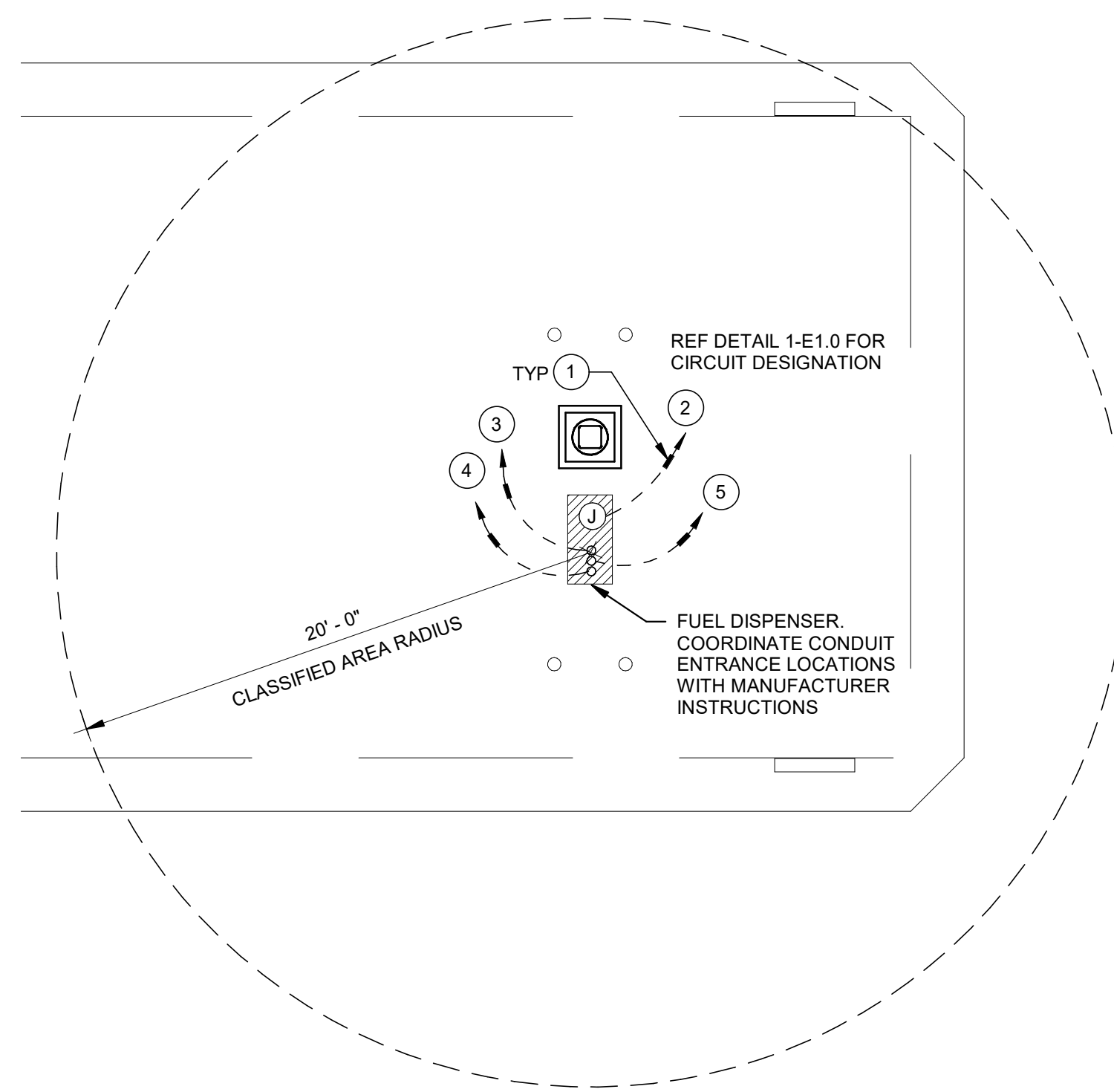
SEAL OFF DETAIL | 4

N.T.S.



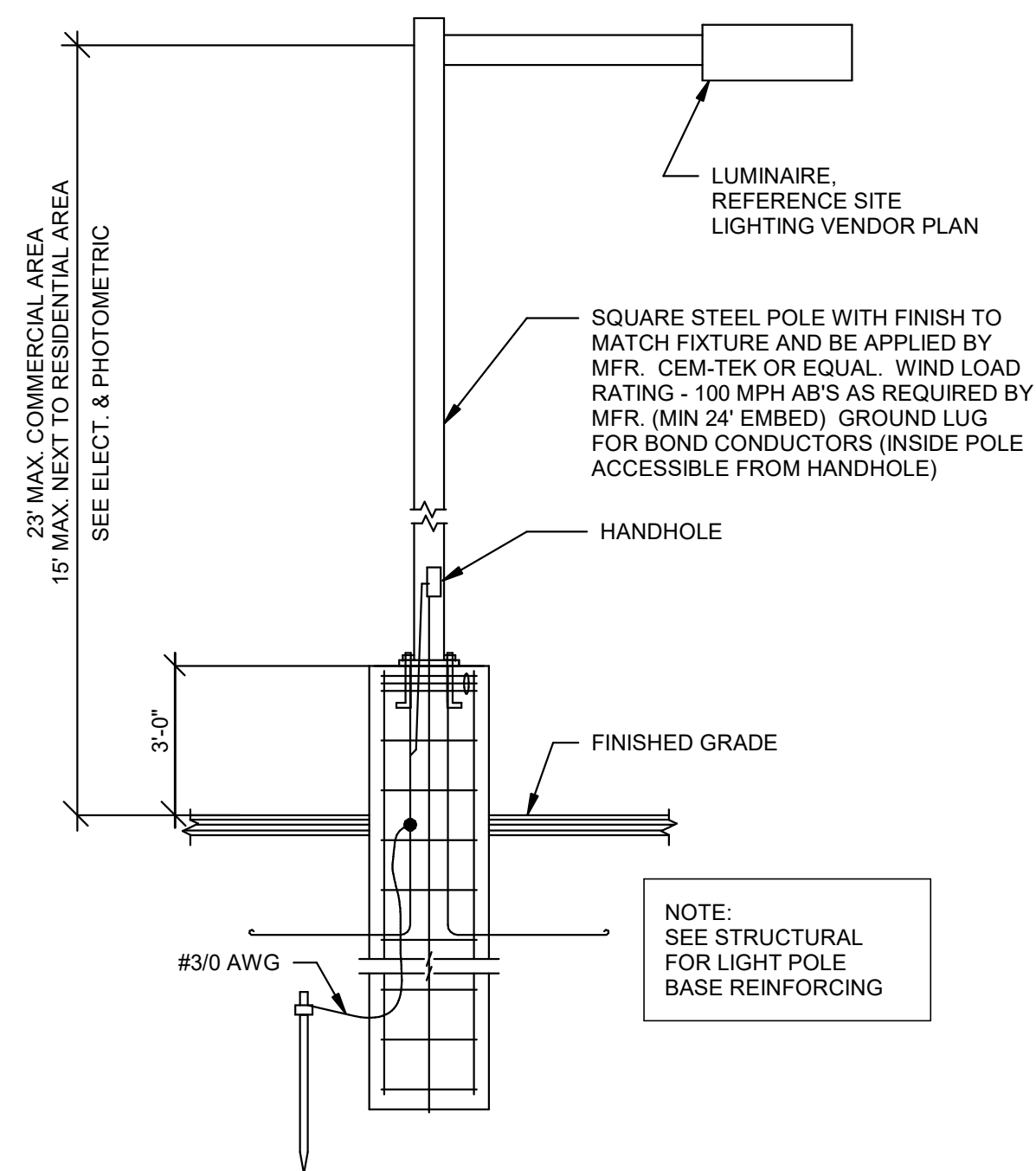
CANOPY GROUNDING | 2

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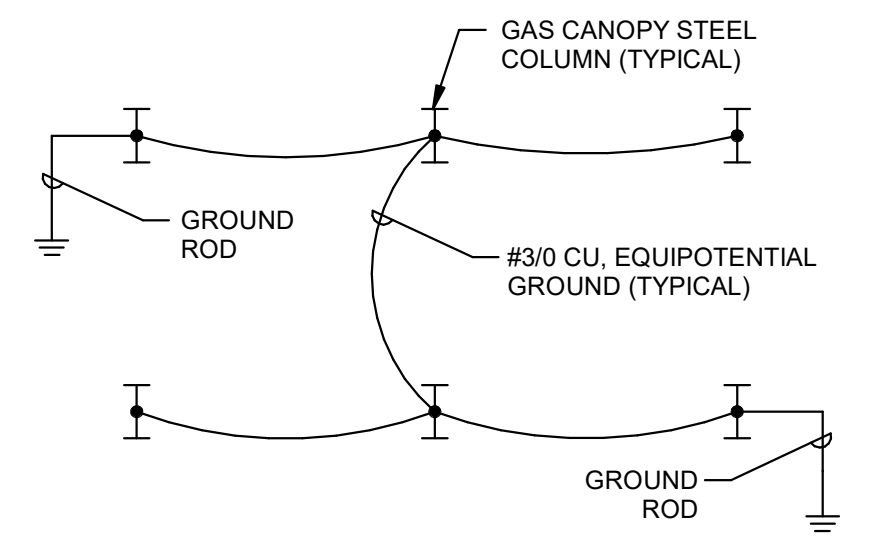
FUEL DISPENSER ENLARGED | 5

3/16" = 1'-0"



LIGHT POLE BASE | 3

N.T.S.



CANOPY GROUNDING DETAIL | 1

N.T.S.

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P.E.

SUITE 5286 479-636-5004  
1805 N 2ND ST JOB NO. 28994  
ROGERS, AR 72756 DESIGNED BY: LHO

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OTF	02/15/23

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PROJECT

CIRCLE K  
STORES, INC.

ANGIER, NC

9706 KENNEBEC CHURCH  
ROAD,  
ANGIER, NC

PROTOCOL# R1.2 12/XX/22

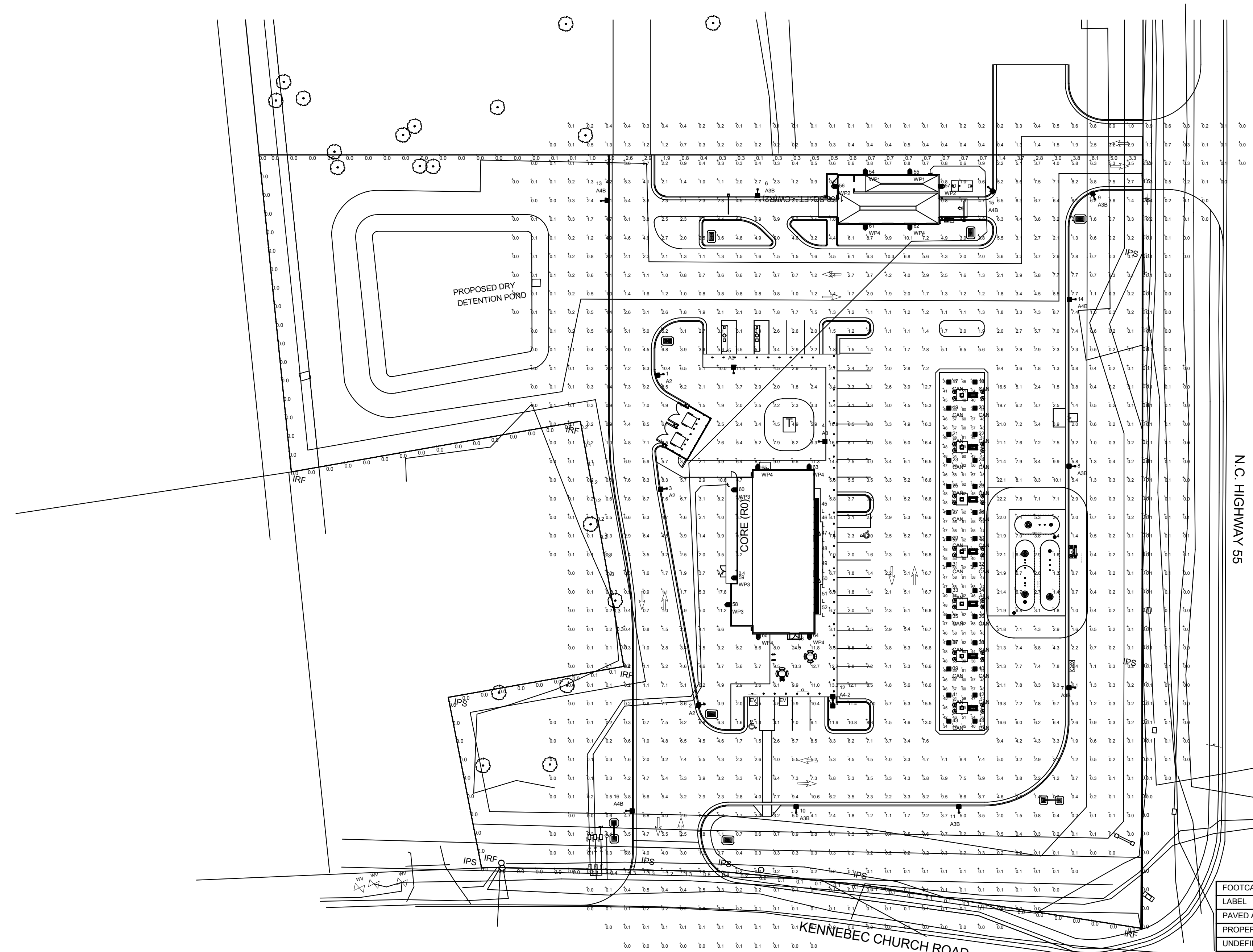


CIRCLE K STORE

PROJECT NUMBER: 22130

ELECTRICAL SITE  
PHOTOMETRIC  
PLAN

E1.2



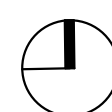
NOTE:  
- ALL AREA LIGHTS ON NEW 15 FT. POLE MOUNTED ON 3 FT. CONCRETE BASE

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PAVED AREA	5.39	24.0	0.6	8.98	40.00
PROPERTY LINE	0.36	6.1	0.0	N.A.	N.A.
UNDEFINED	1.14	17.8	0.0	N.A.	N.A.
UNDER CANOPY	50.16	62	33	1.52	1.88

LUMINAIRE SCHEDULE											
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	DIMMING LUMEN MULTIPLIER	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	CATALOG LOGIC
□	3	A2	Single	16099	1.020	1.000	B3-U0-G3	104	312	Cree Inc	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-2M-UL-NM-XX
□	2	A3	Single	16100	1.020	1.000	B3-U0-G3	104	208	Cree Lighting	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-3M-UL-NM-XX
□	6	A3B	Single	12699	1.020	1.000	B2-U0-G2	104	624	Cree Inc	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-4M-UL-NM-XX + OSQ-BLSMF
□	1	A4-2	Back-Back	16098	1.020	1.000	B3-U0-G3	104	208	Cree Inc	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-4M-UL-NM-XX
□	4	A4B	Single	12349	1.020	1.000	B2-U0-G2	104	416	Cree Inc	OSQ-ML-B-XX-XX + OSQM-B-16L-57K7-4M-UL-NM-XX + OSQ-BLSMF
■	28	CAN	Single	14015	1.010	1.000	B3-U0-G1	86.4	2419.2	Cree Lighting	CPY250-C-13L-57K7-F-UL-DM-XX
■	9	L	FLEXPOD 64IN	51	1.000	1.000	N.A.	0.652	234.72	P-LED	FLEX POD 5000K CUSTOM CUT TO 64IN
■	2	WP1	Single	2490	1.020	0.200	B1-U0-G1	4.94	9.88	Cree Inc	XSPW-B-WM-2ME-2L-40K-UL-XX (SET @ 1.0V)
■	2	WP2	Single	2490	1.020	0.200	B1-U0-G1	4.94	9.88	Cree Inc	XSPW-B-WM-4ME-2L-40K-UL-XX (SET @ 1.0V)
■	3	WP3	Single	6100	1.020	1.000	B2-U0-G2	47	141	Cree Inc	XSPW-B-WM-4ME-6L-40K-UL-XX
■	6	WP4	Single	8873	1.020	1.000	B2-U0-G2	70.82	424.92	Cree Inc	XSPW-B-WM-4ME-8L-40K-UL-XX

ELECTRICAL SITE PHOTOMETRIC PLAN | 1

N.T.S.



11921 Freedom Drive #1110  
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rdcollaborative.com

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PROFESSIONAL

Jason C. Adams  
Professional Engineer

479-636-1004  
JOB NO. 28064  
ROGERS, AR 72756 DESIGNED BY: LHO

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02/15/23  
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CIRCLE K  
STORES, INC.

ANGIER, NC

9706 KENNEBEC CHURCH  
ROAD,  
ANGIER, NC

PROJECT NUMBER: 22130

EXTERIOR LIGHT  
FIXTURE CUT  
SHEETS

E1.3

### OSQ Series OSQ50™ LED Area/Flood Luminaire featuring Cree TrueWhite™ Technology - Medium & Large

Rev. Date: 06/01/2022

**Product Description**  
The OSQ50™ LED Area/Flood luminaire blends extreme optical control, advanced thermal management and premium, class 3 electronics. Built for the outdoors, this rugged cast aluminum luminaire with integrated, weatherproof LED driver compartment. Versatile mounting configurations offer simple installation. In addition, low profile design minimizes wind load requirements and enables convenient on-site size grading from quality fabrication. The 4L luminaire package is a suitable upgrade for HID applications up to 250W, and the 11L luminaire package is a suitable upgrade for HID applications up to 400W. The 30L luminaire package is a suitable upgrade for HID applications up to 750W, and the 36L luminaire package is a suitable upgrade for HID applications up to 1000W.

**Performance Summary**  
Housing: Cree TrueWhite™ Technology w/ 3000K Luminaires  
NANDa® Precision Delivery Optic™ optic  
Assembled in the USA by Cree Lighting from US and imported parts

**Initial Delivered Lumens:** 4,000 - 30,000

**Efficiency:** 110-120 LM/W

**Color:** Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Operating Voltage:** 120V, 277V, 347V, 480V  
 LED: Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Warranty:** 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

**Ordering Information**  
1000 Series  
 OSQ50-36L-120V-4000K-90CRI-01  
 OSQ50-36L-120V-5000K-90CRI-01

**Accessories**  
 OSQ50-36L-120V-4000K-90CRI-01  
 OSQ50-36L-120V-5000K-90CRI-01  
 OSQ50-36L-120V-4000K-90CRI-01  
 OSQ50-36L-120V-5000K-90CRI-01

**Mounting Options:** 12" (305mm), 15" (381mm), 18" (457mm), 24" (610mm), 30" (762mm), 36" (914mm), 42" (1067mm), 48" (1219mm), 54" (1372mm), 60" (1524mm), 66" (1676mm), 72" (1829mm), 78" (1981mm), 84" (2134mm), 90" (2287mm), 96" (2440mm), 102" (2592mm), 108" (2745mm), 114" (2898mm), 120" (3051mm)

**Weight:** 10.5 lbs (4.8 kg) (36L), 11.5 lbs (5.2 kg) (42L), 12.5 lbs (5.7 kg) (48L), 14.5 lbs (6.6 kg) (54L), 16.5 lbs (7.5 kg) (60L), 18.5 lbs (8.4 kg) (66L), 20.5 lbs (9.3 kg) (72L), 22.5 lbs (10.2 kg) (78L), 24.5 lbs (11.1 kg) (84L), 26.5 lbs (12.0 kg) (90L), 28.5 lbs (12.9 kg) (96L), 30.5 lbs (13.8 kg) (102L), 32.5 lbs (14.7 kg) (108L), 34.5 lbs (15.6 kg) (114L), 36.5 lbs (16.5 kg) (120L)

### CPY Series - Version C CPY50™ LED Canopy/Suffit Luminaire

Rev. Date: 01/27/2023

**Product Description**  
The CPY50™ LED Canopy/Suffit luminaire has an extremely grille constructed of rugged cast aluminum. It can be surface mounted using the new back box or be recessed into a ceiling. The lighting is controlled via a DALI dimming system, providing a wide range of lighting options. The luminaire is designed for easy installation and is suitable for use in a variety of applications.

**Performance Summary**  
Housing: Cree TrueWhite™ Technology w/ 3000K Luminaires  
NANDa® Precision Delivery Optic™ optic  
Assembled in the USA by Cree Lighting from US and imported parts

**Initial Delivered Lumens:** 10 - 25,000

**Efficiency:** 110-120 LM/W

**Color:** Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Operating Voltage:** 120V, 277V, 347V, 480V  
 LED: Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Warranty:** 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

**Ordering Information**  
1000 Series  
 CPY50-10-120V-4000K-90CRI-01  
 CPY50-10-120V-5000K-90CRI-01

**Accessories**  
 CPY50-10-120V-4000K-90CRI-01  
 CPY50-10-120V-5000K-90CRI-01  
 CPY50-10-120V-4000K-90CRI-01  
 CPY50-10-120V-5000K-90CRI-01

### XSP Series XSP50™ LED Wall Mount Luminaire featuring Cree TrueWhite™ Technology

Rev. Date: 06/01/2022

**Product Description**  
The XSP50™ LED wall mount luminaire has a slim, low profile design intended for outdoor wall applications. The rugged, high-grade aluminum housing and mounting bracket are designed for maximum performance. The luminaire is designed for easy installation and is suitable for use in a variety of applications.

**Performance Summary**  
Housing: Cree TrueWhite™ Technology w/ 3000K Luminaires  
NANDa® Precision Delivery Optic™ optic  
Assembled in the USA by Cree Lighting from US and imported parts

**Initial Delivered Lumens:** 10 - 25,000

**Efficiency:** 110-120 LM/W

**Color:** Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Operating Voltage:** 120V, 277V, 347V, 480V  
 LED: Minimum 70 CRI (3000K, 4000K & 5000K), 90 CRI (3000K)

**Warranty:** 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

**Ordering Information**  
1000 Series  
 XSP50-10-120V-4000K-90CRI-01  
 XSP50-10-120V-5000K-90CRI-01

**Accessories**  
 XSP50-10-120V-4000K-90CRI-01  
 XSP50-10-120V-5000K-90CRI-01  
 XSP50-10-120V-4000K-90CRI-01  
 XSP50-10-120V-5000K-90CRI-01

### Remote Fixture Camray® LED Series

Low-profile, slim look and performance in a remote fixture

Table A - Spacing for NPFA60 (average + WTC) - Average of 1 foot candle  
 Table B - Spacing for Minimum Illumination - WTC - Minimum of 1 foot candle  
 Table C - Spacing for Minimum Illumination - WTC - Minimum of 1 foot candle

**Photometry performance - Wide beam**  
 Table A: 11" x 11" (280mm x 280mm) fixture  
 Table B: 18" x 18" (457mm x 457mm) fixture  
 Table C: 24" x 24" (610mm x 610mm) fixture

**Photometry performance - Forward throw**  
 Table A: 11" x 11" (280mm x 280mm) fixture  
 Table B: 18" x 18" (457mm x 457mm) fixture  
 Table C: 24" x 24" (610mm x 610mm) fixture

### OSQ50™ LED Area/Flood Luminaire featuring Cree TrueWhite™ Technology - Medium & Large

Rev. Date: 06/01/2022

**Product Specifications**  
**CREE TRUEWHITE™ TECHNOLOGY**  
 Cree TrueWhite™ Technology is a patented process that provides superior color rendering and reduces energy consumption. It is a patented process that provides superior color rendering and reduces energy consumption. It is a patented process that provides superior color rendering and reduces energy consumption. It is a patented process that provides superior color rendering and reduces energy consumption.

**CONSTRUCTION & MATERIALS**  
 • 100% aluminum body and heat sink  
 • High quality, rugged cast aluminum housing  
 • Weatherproof LED driver compartment  
 • Integrated thermal management system  
 • Premium, class 3 electronics

**WARRANTY**  
 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

### CPY50™ LED Canopy/Suffit Luminaire - Version C

Rev. Date: 01/27/2023

**Product Specifications**  
**CONSTRUCTION & MATERIALS**  
 • 100% aluminum body and heat sink  
 • High quality, rugged cast aluminum housing  
 • Weatherproof LED driver compartment  
 • Integrated thermal management system  
 • Premium, class 3 electronics

**WARRANTY**  
 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

### XSP50™ LED Wall Mount Luminaire

Rev. Date: 06/01/2022

**Product Specifications**  
**CONSTRUCTION & MATERIALS**  
 • 100% aluminum body and heat sink  
 • High quality, rugged cast aluminum housing  
 • Weatherproof LED driver compartment  
 • Integrated thermal management system  
 • Premium, class 3 electronics

**WARRANTY**  
 5 years on luminaire; 5 years on Cree/Philips™ LED's; 3 years for PML (luminaire or LED's - whichever is first); 5 years for Cree/Philips™ LED's; 5 years for PML (luminaire or LED's - whichever is first)

### Remote Fixture Camray® LED Series

Low-profile, slim look and performance in a remote fixture

**Photometry performance - Wide beam**  
 Table A: 11" x 11" (280mm x 280mm) fixture  
 Table B: 18" x 18" (457mm x 457mm) fixture  
 Table C: 24" x 24" (610mm x 610mm) fixture

**Photometry performance - Forward throw**  
 Table A: 11" x 11" (280mm x 280mm) fixture  
 Table B: 18" x 18" (457mm x 457mm) fixture  
 Table C: 24" x 24" (610mm x 610mm) fixture

### TYPE "A2", "A3", "A3B", "A4-2" & "A4B" LIGHT FIXTURE

**CREE LIGHTING**

### TYPE "CAN" LIGHT FIXTURE

**CREE LIGHTING**

### TYPE "WP1", "WP2", "WP3" & "WP4" LIGHT FIXTURE

**CREE LIGHTING**

### TYPE "W" LIGHT FIXTURE

**CREE LIGHTING**

COORDINATE ROUTING OF BRANCH CIRCUITS IN SIPS PANEL WITH VENDOR INSTALLED CHASES OR IN FURRED OUT WALLS. CIRCUITS SHALL NOT BE ROUTED EXPOSED ON SIPS PANELS OR WALLS. MINIMAL CUTTING OF SIPS PANELS FOR RECESSED BOXES OR DEVICES IS ALLOWED. COORDINATE LOCATIONS WITH PANEL MANUFACTURER

**NOTE:**  
REFER TO SHEETS A1.5.1 AND A1.5.2 FOR ADDITIONAL EQUIPMENT ELECTRICAL INFORMATION AND REQUIREMENTS.

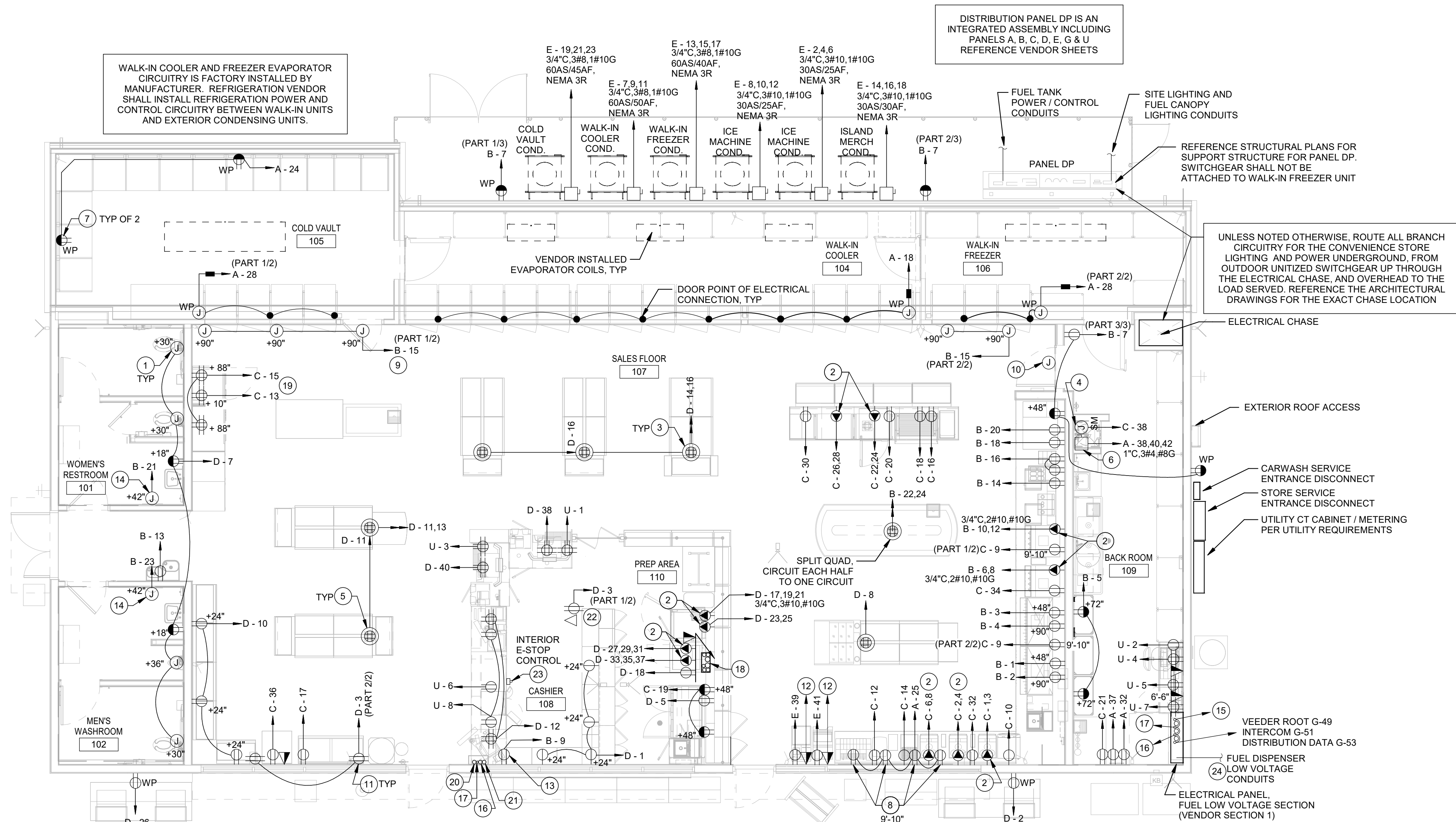
SECURITY CAMERAS AND MONITORS ARE FURNISHED AND INSTALLED BY OTHERS. CONTRACTOR TO PROVIDE ALL PENETRATIONS AND WIRING IN ACCORDANCE WITH LOCAL CODE. SECURITY CONTRACTOR IS RESPONSIBLE FOR LOW VOLTAGE PERMITTING AND INSPECTIONS. ALL PENETRATIONS IN EXTERIOR WALLS AND WALK-IN COOLERS SHALL BE SEALED PER SPECIFICATIONS. CONTRACTOR TO COORDINATE WITH SECURITY SYSTEM INSTALLER.

**POWER GENERAL NOTES**

- ALL ELECTRICAL DEVICES SHALL BE WEATHERPROOF.
- ALL 125V THROUGH 250V RECEPTACLES SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150V OR LESS TO GROUND, 50A OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE CIRCUITS RATED 150V OR LESS TO GROUND, 100A OR LESS LOCATED AT FOOD PREPARATION, FOOD SERVICE OR BEVERAGE COUNTERS SHALL BE PROTECTED BY A READILY ACCESSIBLE GFCI DEVICE PER NEC 210.8(B) (2). GFCI DEVICE MAY BE LOCATED EITHER IN A RECEPTACLE OR CIRCUIT BREAKER. FACE PLATE OF RECEPTACLE CONTROLLED BY GFCI DEVICE SHALL BE MARKED WITH GFCI PROTECTED SYMBOL.
- ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRINGS.
- REFER TO DRAWING A1.5 FOR EQUIPMENT SCHEDULE AND TERMINATION REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR ISLAND DETAILS.
- ALL EQUIPMENT WITH REMOTE CONDENSERS MOUNTED ON THE ROOF SHALL HAVE 1/2" EMPTY CONDUIT (SEE POWER GENERAL NOTE 3) BETWEEN THE EQUIPMENT AND THE REMOTE CONDENSER FOR CONTROL CIRCUITS.
- ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT CONNECTIONS, MOUNTING HEIGHTS AND CORD REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION. ALL EQUIPMENT SHALL BE LISTED FOR ITS INTENDED USE PER NEC ART. 400.7.
- PROVIDE HEAT TAPE FOR ALL EXPOSED PIPING. HEAT TAPE TO BE FROM THE SAME CIRCUIT SERVING EQUIPMENT. SEE MECHANICAL SHEETS FOR DETAILS.
- ELECTRICAL CONVEYANCES FROM BREAKERS TO OUTLET OR FIXTURE SHALL BE ENCLOSED WITHIN CEILING SPACE, FINISHED WALLS OR CABINETRY AND NOT EXPOSED. CODE 6-201.12.

**KEYNOTES**

- JUNCTION BOX FOR AUTOMATIC FLUSH SENSOR. COORDINATE EXACT MOUNTING HEIGHT WITH MANUFACTURER INSTRUCTIONS AND PLUMBING CONTRACTOR.
- PROVIDE SPECIAL OUTLET FOR COMPLETE CONNECTION OF EQUIPMENT. VERIFY EXACT NEMA FLOORING WITH SUPPLIED EQUIPMENT.
- PROVIDE FLUSH RECESSED HUBBELL FLOOR BOX WITH BRASS COVER PLATE FOR POWER TO DISPLAYS AND EQUIPMENT.
- PROVIDE JUNCTION BOX FOR HARD WIRE CONNECTION TO RE-CIRC PUMP AND AQUA-STAT TIMER. PROVIDE MOTOR RATED SWITCH PER 422.31 (C). VERIFY EXACT LOCATION AND MOUNTING HEIGHT PRIOR TO ROUGH-IN.
- PROVIDE 3/4" CONDUIT UNDER SLAB FROM CASEWORK BACK TO WALL FOR 120V POWER TO FLOOR BOXES. ROUTE IN FIELD TO NEAREST ACCESSIBLE POINT AND MINIMIZE INTERFERENCES. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.
- WATER HEATER AT 208V 3PH. PROVIDE 100A 250V 3P-EQUIPMENT GROUND, NON-FUSIBLE DISCONNECT SWITCH INSTALLED IN READILY ACCESSIBLE LOCATION.
- MOUNT RECEPTACLE TO ACCESSIBLE CEILING IN COOLER / BEER CAVES FOR LOW VOLTAGE SIGNAGE. SEAL SLEEVE WITH POLY SILICON CAULKING TO PREVENT MOISTURE AND AIR FROM ENTERING AND DAMAGING THE TRANSFORMER AND LOW VOLTAGE WIRING.
- PROVIDE JUNCTION BOX WITH DUPLEX RECEPTACLE FOR FLUG IN ABOVE THE CEILING GRID.
- PROVIDE JUNCTION BOX ABOVE CEILING FOR HARDWIRED ELECTRICAL CONNECTION.
- CO2 ALARM STROBE JUNCTION BOX. SINGLE GANG JUNCTION BOX MOUNTED 8" BELOW CEILING CENTERED ON DOOR WITH CONDUIT TO ACCESSIBLE BACKROOM CEILING SPACE FOR LOW VOLTAGE COMMUNICATION WIRING BY OTHERS.
- PROVIDE FLUSH MOUNT RECEPTACLE IN CEILING FOR WINDOW DISPLAYS.
- JUNCTION BOX WITH (1) 3/4" EMPTY CONDUIT TO NETWORK SWITCH IN OFFICE AREA FOR ATM DATA.
- JUNCTION BOX AND RECEPTACLE FOR CO2 MONITOR CONTROL PANEL. CATEGORY 5 CONTROL WIRING TO BE CONCEALED WITHIN WALL. NO EXPOSED WIRING IN SALES AREA.
- HAND DRYER. INSTALL PER MANUFACTURER INSTRUCTIONS.
- (1) 2" EMPTY CONDUIT WITH PULL STRING TO MANAGER'S DESK.
- (1) 2" EMPTY CONDUIT WITH PULL STRING FROM ELECTRICAL EQUIPMENT LOW VOLTAGE PANEL SECTION TO CHECKOUT CABINET. REFERENCE ELECTRICAL EQUIPMENT VENDOR INFORMATION.
- (1) 1" EMPTY CONDUIT WITH PULL STRING FOR INTERCOM FROM ELECTRICAL LOW VOLTAGE PANEL SECTION TO CHECKOUT. REFERENCE ELECTRICAL EQUIPMENT VENDOR INFORMATION.
- PROVIDE AND INSTALL CONDUIT(S) UNDER SLAB FROM THE BACK OF THE HOUSE TO THE FOOD PREP AREA IN FRONT OF STORE. TRANSITION FROM PVC TO GRC 90 DEGREE ELL TO STUB-UP THROUGH SLAB AND CONTINUE CIRCUIT TO EQUIPMENT RECEPTACLE USING ARMORED FLEX. PROVIDE A MEANS OF MOUNTING FOR RECEPTACLE UNDER THE EQUIPMENT. CONFIRM EXACT LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION.
- WINE RACK RECEPTACLES: REFERENCE MANUFACTURER INSTRUCTION FOR EXACT LOCATION OF RECEPTACLES WITHIN DISPLAY.
- (1) 2" EMPTY CONDUIT WITH PULL STRING FROM CHECKOUT CABINET TO NETWORK RACK IN BACKROOM AT MANAGER'S DESK AREA.
- CEILING MOUNTED RECEPTACLE AND DATA OUTLET FOR CAR WASH MENU SCREEN.
- INTERIOR E-STOP / CASHIER CONTROL PANEL MOUNTED UNDER COUNTER. FIELD VERIFY LOCATION WITH CONSTRUCTION MANAGER.
- FUEL ISLAND DISPENSER / FUEL TANK POWER, CONTROL AND MONITORING CONDUIT ENTRANCES. REFERENCE SHEET E1.0, DETAILS 5/E1.1, 6/E1.1 AND FUEL SYSTEM VENDOR DRAWINGS.



**ELECTRICAL FLOOR PLAN | 1**  
3/16" = 1'-0"



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PROFESSIONAL

Jason C. Adams  
P.E.

SUITE 5288 479-636-5004  
1605 N 2ND ST JOE NO: 29894  
ROGERS, AR 72756 DESIGNED BY: LHO

**REVISION**

ISSUE	DATE
OTF	02/15/23



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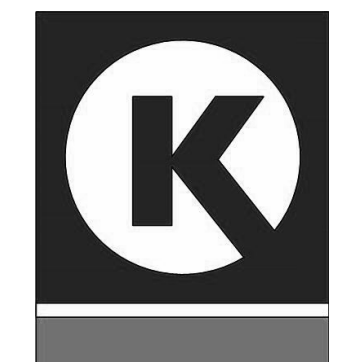
PROJECT

**CIRCLE K STORES, INC.**

**ANGIER, NC**

9706 KENNEBEC CHURCH ROAD,  
ANGIER, NC

PROTOCOL# R1.2 12/XX/22



CIRCLE K STORE

PROJECT NUMBER: 22130

**ELECTRICAL FLOOR PLAN**

**E2.0**

**ROOF POWER GENERAL NOTES**

1. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF RATED.
2. ALL EQUIPMENT WITH REMOTE CONDENSERS MOUNTED ON THE ROOF SHALL HAVE (1) 1/2" EMPTY CONDUIT BETWEEN THE EQUIPMENT AND THE REMOTE CONDENSER FOR CONTROL CIRCUITS.
3. ROUTE CONDUIT(S) FOR CONDENSERS THROUGH SAME WEATHERPROOF GOOSENECK USED FOR CONDENSATE PIPING - REFER TO DETAIL #2 ON SHEET M1.2.1.
4. SEAL ALL BUILDING PENETRATIONS.
5. HEAT TRACE TO BE PROVIDED IN COLD REGIONS.

**KEYNOTES**

- 1 MOUNT PHOTOCELL TO INTERIOR WALL OF PARAPET. ROUTE CONDUIT THROUGH PARAPET WALL TO LIGHTING CONTROL. DETAIL 2/E6.0.
- 2 ROOF TOP UNIT IS PROVIDED WITH MANUFACTURER FACTORY INSTALLED DISCONNECT AND GFI MAINTENANCE RECEPTACLE. CIRCUIT AS SHOWN.
- 3 WP, GFI MOISTURE RESISTANT RECEPTACLE ON ROOF.
- 4 WP JUNCTION BOX ON ROOF FOR SATELLITE DISH WITH 1" EMPTY CONDUIT TO CASHIER COUNTER LOTTO MACHINE. VERIFY EXACT LOCATION OF SATELLITE DISH IN FIELD.
- 5 EXTEND CONDUIT AND WIRE TO THERMOSTAT FOR LINE VOLTAGE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.

**rdc.**

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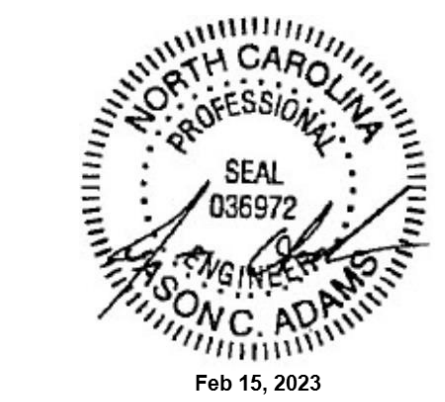
**PROFESSIONAL**

Jason C. Adams  
P.E.

SUITE 5288 479-636-0004  
1805 N 2ND ST JOE NO: 29894  
ROGERS, AR 72756 DESIGNED BY: LHO

**REVISION**

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Feb 15, 2023

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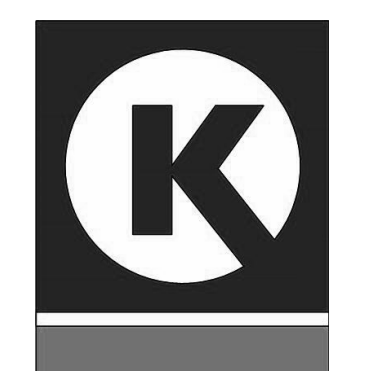
**PROJECT**

**CIRCLE K STORES, INC.**

**ANGIER, NC**

9706 KENNEBEC CHURCH ROAD,  
ANGIER, NC

PROTCYCLE# R1.2 12/XX/22

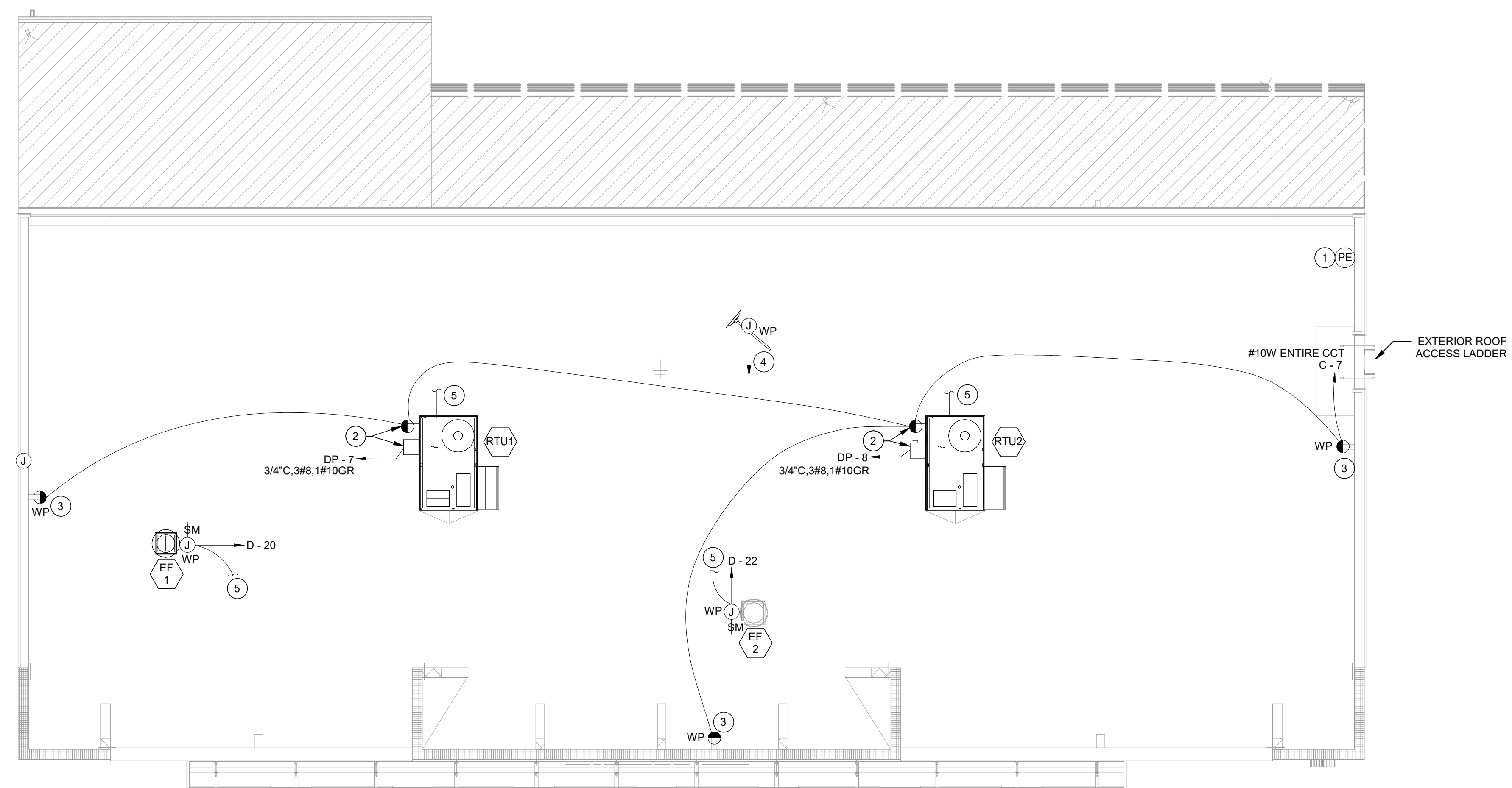


CIRCLE K STORE

PROJECT NUMBER: 22130

**ROOF POWER PLAN**

**E4.0**



**ROOF POWER PLAN | 1**  
3/16" = 1'-0"





COMcheck Software Version COMcheckWeb  
**Interior Lighting Compliance Certificate**

**Project Information**

Energy Code: 2018 IECC  
 Project Title: Circle K 22130 Angier NC (BG 29894)  
 Project Type: New Construction

Construction Site: 9706 Kennebec Church Road, Angier, North Carolina  
 Owner/Agent: [Blank]  
 Designer/Contractor: Jason C Adams, Benchmark Group, 1805 N 2nd Street, Rogers, Arkansas 72756, 479-636-5004, JCA@teamofchoice.com

Credits: 1.0 Required 1.0 Proposed  
 Reduced Lighting Power, 1.0 credit

**Allowed Interior Lighting Power**

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Men's Restroom (Common Space Types:Restrooms)	133	0.77	102
2-Women's Restroom (Common Space Types:Restrooms)	134	0.77	103
3-Back Room (Common Space Types:Storage >=50 - <=1000 sq.ft.)	296	0.41	121
4-Hallway (Common Space Types:Corridor/Transition <8 ft wide)	57	0.59	34
5-Sales Floor (Retail/Sales Area)	2282	1.10	2510
6-Carwash Wash Bay (Automotive/Vehicular Maintenance Area)	856	0.50	428
7-Carwash Equipment (Common Space Types:Electrical/Mechanical)	345	0.39	135
8-CW Entry (Common Space Types:Lobby - General)	75	0.90	68
9-Carwash Electrical rm. (Common Space Types:Electrical/Mechanical)	42	0.39	16
Total Allowed Watts =			3517

**Proposed Interior Lighting Power**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Men's Restroom (Common Space Types:Restrooms) LED: B: 6" LED Recessed Downlight; LED Other Fixture Unit 25W:	1	6	21	126
2-Women's Restroom (Common Space Types:Restrooms) LED: B: 6" LED Recessed Downlight; LED Other Fixture Unit 25W:	1	6	21	126
3-Back Room (Common Space Types:Storage >=50 - <=1000 sq.ft.) LED: A, AE: 2x4 LED Troffer; LED Panel 41W:	1	4	41	164
4-Hallway (Common Space Types:Corridor/Transition <8 ft wide) LED: A, AE: 2x4 LED Troffer; LED Panel 41W:	1	1	41	41
5-Sales Floor (Retail/Sales Area) LED: A, AE: 2x4 LED Troffer; LED Panel 41W:	1	29	41	1189

Project Title: Circle K 22130 Angier NC (BG 29894) Report date: 02/15/23  
 Data filename: Page 1 of 8

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
LED: C, CE: 2x2 LED Troffer; LED Panel 33W:	1	12	33	396
LED: B: 6" LED Recessed Downlight; LED Other Fixture Unit 25W:	1	3	21	63
LED: J: 8" LED Linear fixture; LED Other Fixture Unit 90W:	1	2	92	184
6-Carwash Wash Bay (Automotive/Vehicular Maintenance Area) LED: N: LED Other Fixture Unit 125W:	1	6	145	870
7-Carwash Equipment (Common Space Types:Electrical/Mechanical) LED: M: LED Other Fixture Unit 80W:	1	2	96	192
8-CW Entry (Common Space Types:Lobby - General) LED: P: LED Other Fixture Unit 46W:	1	1	45	45
9-Carwash Electrical rm. (Common Space Types:Electrical/Mechanical) LED: P: LED Other Fixture Unit 46W:	1	1	45	45
Total Proposed Watts =			3441	

Interior Lighting PASSES: Design 2% better than code

**Interior Lighting Compliance Statement**

The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Jason C. Adams P.E. Signature Date: 02/15/23

Project Title: Circle K 22130 Angier NC (BG 29894) Report date: 02/15/23  
 Data filename: Page 2 of 8

COMcheck Software Version COMcheckWeb  
**Exterior Lighting Compliance Certificate**

**Project Information**

Energy Code: 2018 IECC  
 Project Title: Circle K 22130 Angier NC (BG 29894)  
 Project Type: New Construction  
 Exterior Lighting Zone: 2 (Neighborhood business district (LZ2))

Construction Site: 9706 Kennebec Church Road, Angier, North Carolina  
 Owner/Agent: [Blank]  
 Designer/Contractor: Jason C Adams, Benchmark Group, 1805 N 2nd Street, Rogers, Arkansas 72756, 479-636-5004, JCA@teamofchoice.com

**Allowed Exterior Lighting Power**

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Fuel sales canopy (Free standing/attached sales canopy)	5479 ft2	0.4	Yes	2192
Drive/Parking (Driveway)	70000 ft2	0.04	Yes	2800
Dining area	800 ft2	0.65	Yes	520
Walkway < 10 feet wide	296 ft of	0.5	Yes	148
Entry canopy	123 ft2	0.25	Yes	31
Total Tradable Watts (a) =				5690
Total Allowed Watts =				5690
Total Allowed Supplemental Watts (b) =				400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.  
 (b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

**Proposed Exterior Lighting Power**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Fuel sales canopy (Free standing/attached sales canopy, 5479 ft2): Tradable Wattage LED: CAN: LED Canopy Light: LED Panel 80W:	1	28	86	2408
Drive/Parking (Driveway, 70000 ft2): Tradable Wattage LED: A2, A3, A3B,A4-2,A4B: LED Roadway-Parking Unit 106W:	1	17	104	1768
Dining area (800 ft2): Tradable Wattage LED: WP3, WP4: Wall pack: LED Other Fixture Unit 46W:	1	2	47	94
Walkway < 10 feet wide (296 ft of walkway length): Tradable Wattage LED: WP3, WP4: LED Other Fixture Unit 6.5W:	1	5	47	235
Entry canopy (123 ft2): Tradable Wattage LED: L: 64" LED 24 volt tape: LED Other: Fixture Unit 40W:	1	8	44	352
Total Tradable Proposed Watts =			4857	

Project Title: Circle K 22130 Angier NC (BG 29894) Report date: 02/15/23  
 Data filename: Page 3 of 8

Exterior Lighting PASSES: Design 20% better than code

**Exterior Lighting Compliance Statement**

The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Jason C. Adams P.E. Signature Date: 02/15/23

Project Title: Circle K 22130 Angier NC (BG 29894) Report date: 02/15/23  
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CIRCLE K  
 STORES, INC.

ANGIER, NC

9706 KENNEBEC CHURCH  
 ROAD,  
 ANGIER, NC

PROTOCOL# R1.2 12/XX/22

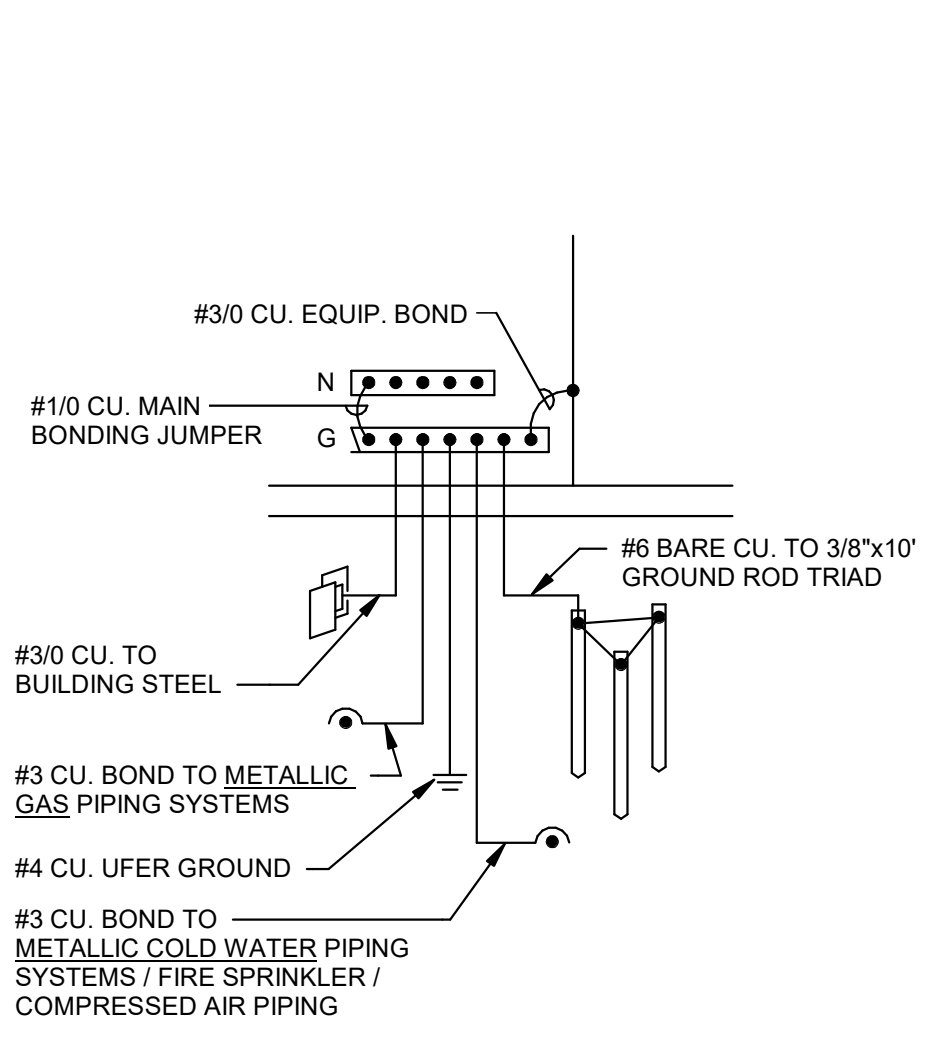


CIRCLE K STORE

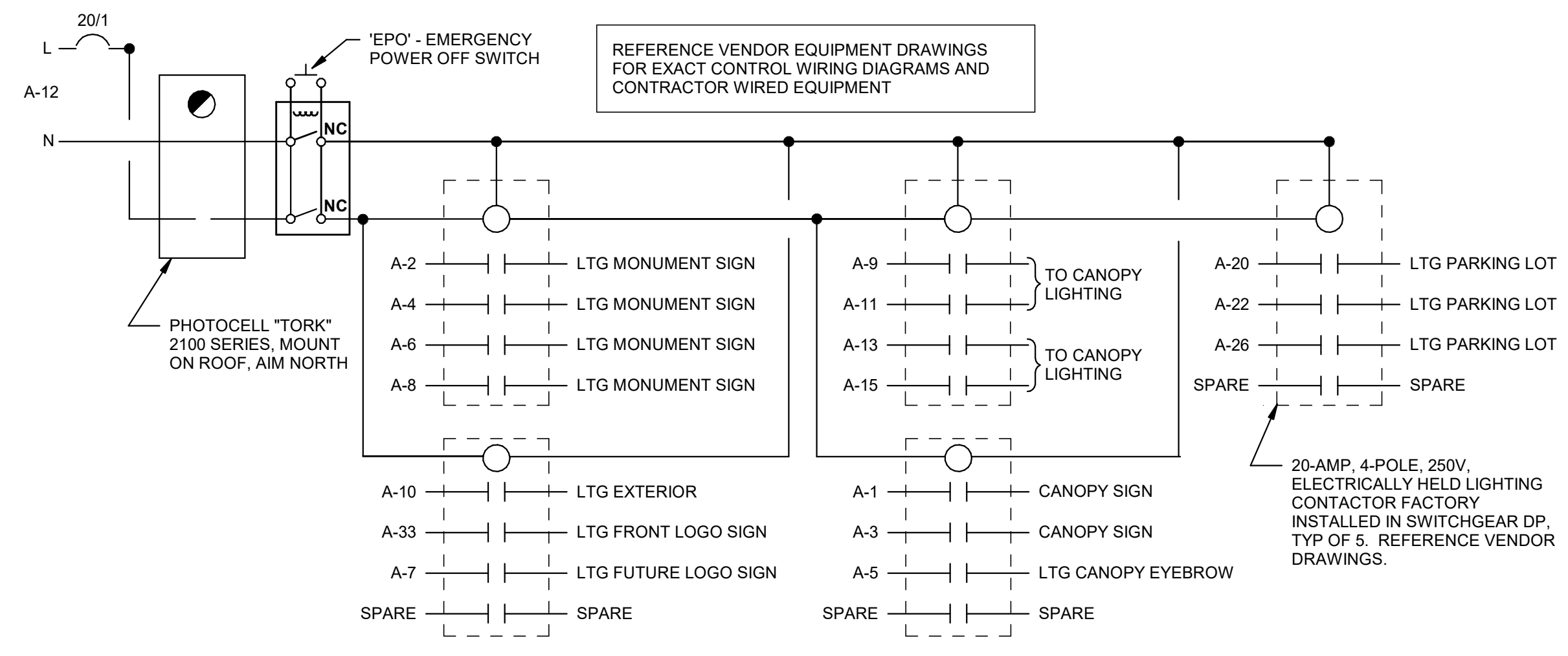
PROJECT NUMBER: 22130

LIGHTING  
 COMPLIANCE  
 REPORT

E5.1

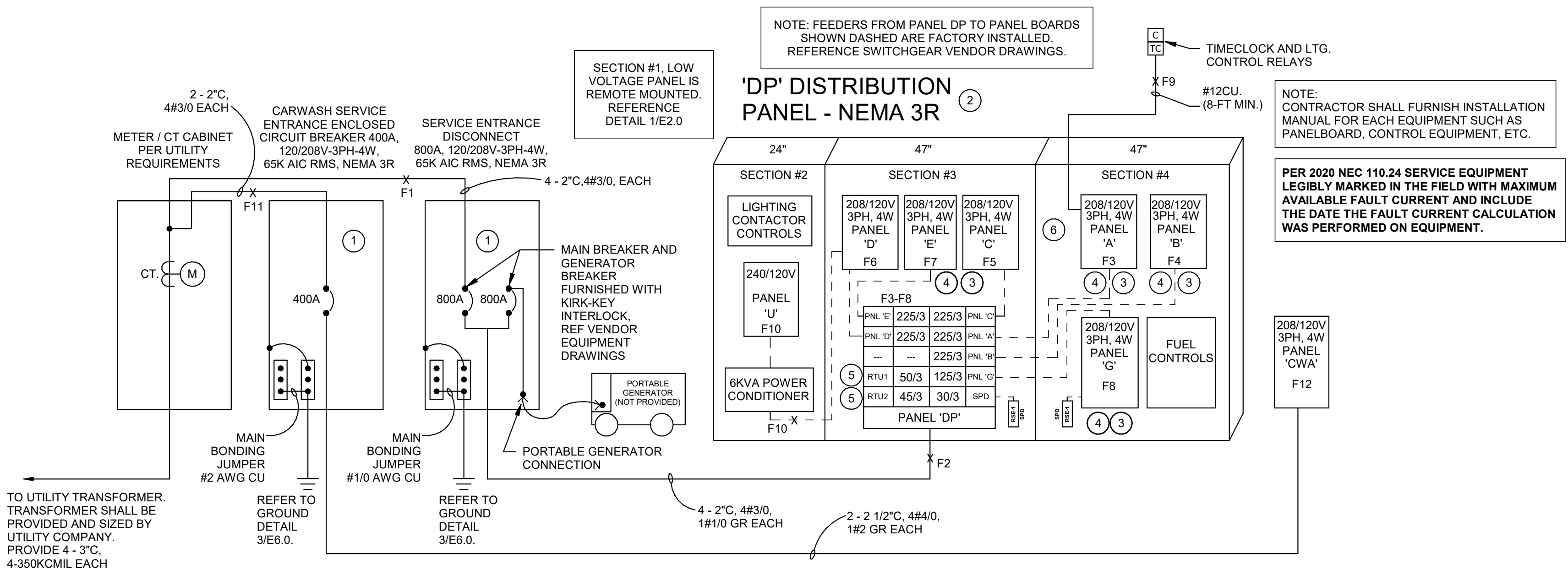


**GROUNDING DETAIL | 3**  
N.T.S.



**LIGHTING CONTROL DIAGRAM | 2**  
N.T.S.

- SERIES RATING GENERAL NOTES**
1. THE MOTOR CONTRIBUTION TO THE FAULT CURRENT MEETS THE 1% CRITERIA STATED IN NEC 240.86(C)
  2. NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ELECTRICAL ENGINEER AND THE ELECTRICAL INSPECTOR.
- ONE-LINE KEYNOTES**
1. THIS SERVICE IS A SERIES RATED SYSTEM: 2-TIER 65/10. ALL SERVICE ENTRANCE EQUIPMENT SYSTEM COMPONENTS SHALL BE RATED 65K, WITH SERIES RATED DOWNSTREAM.
  2. CONTRACTOR SHALL LABEL SERVICE ENTRANCE EQUIPMENT "CAUTION - SERIES RATED SYSTEM (65). 65,000 AMPS AVAILABLE IDENTIFIED REPLACEMENT COMPONENT REQUIRED." IN ACCORDANCE WITH NEC 110.22.
  3. CONTRACTOR SHALL LABEL PANEL(S) "CAUTION - SERIES RATED SYSTEM ("X"). "X" AMPS AVAILABLE IDENTIFIED REPLACEMENT COMPONENT REQUIRED IN ACCORDANCE WITH NEC 110.22". (REFER TO SHORT CIRCUIT CALCULATIONS FOR ACTUAL AMPS TO BE LABELED).
  4. CIRCUIT BREAKERS SHALL BE A BOLT-ON TYPE U.L. LISTED SERIES RATED COMBINATION WITH THE BREAKERS AT DISTRIBUTION PANEL "DP".
  5. REFER TO E4.0 ROOF POWER PLAN FOR WIRE AND CONDUIT SIZE FOR ROOF TOP UNITS.
  6. MAXIMUM CIRCUIT BREAKER HEIGHT EQUAL TO 6'-7" AFF OR AFG.



**RISER DIAGRAM - CAR WASH | 1**  
N.T.S.

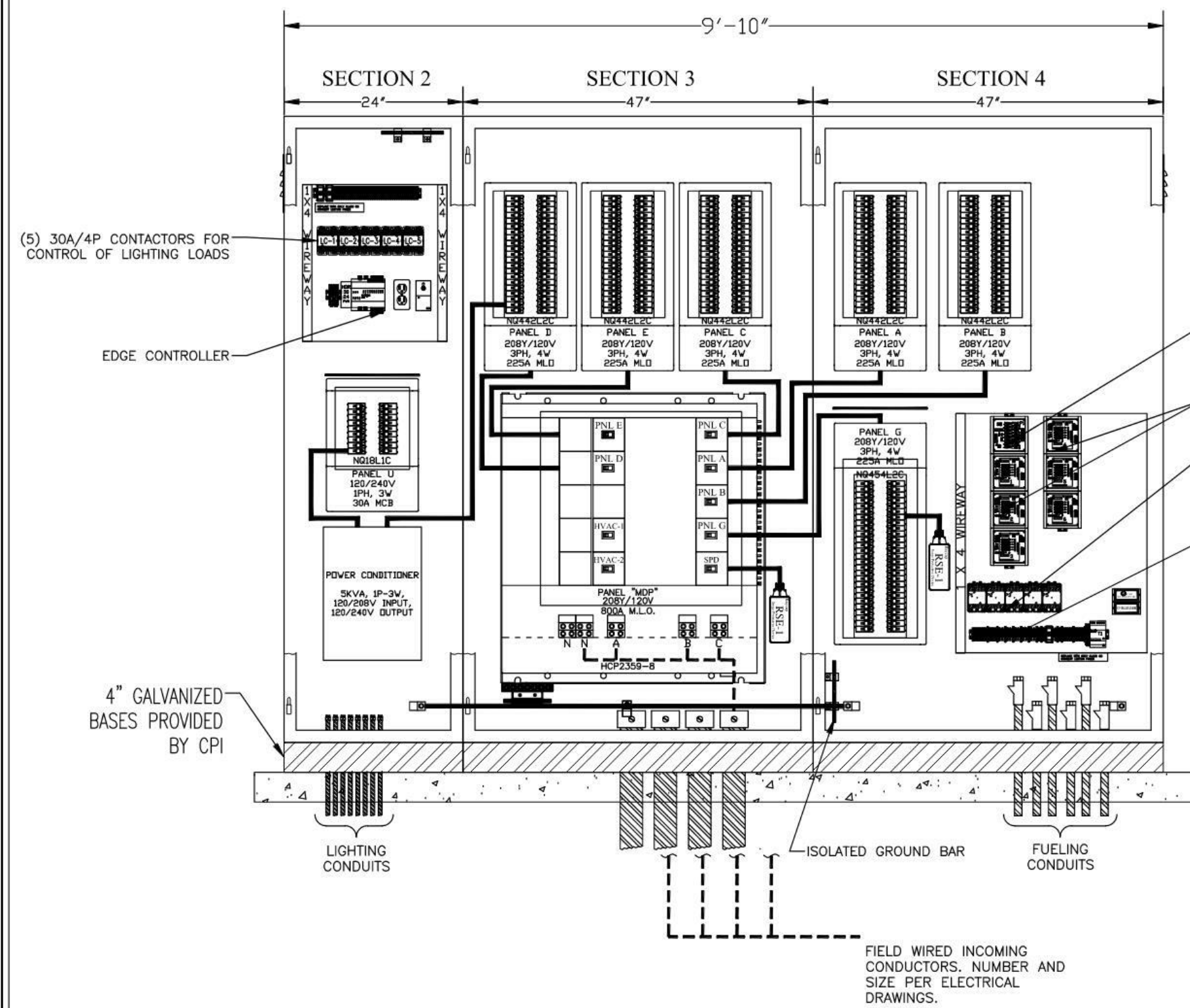
# INTERIOR / DEADFRONT / EXTERIOR CABINET VIEWS

OUTSIDE BUILDING

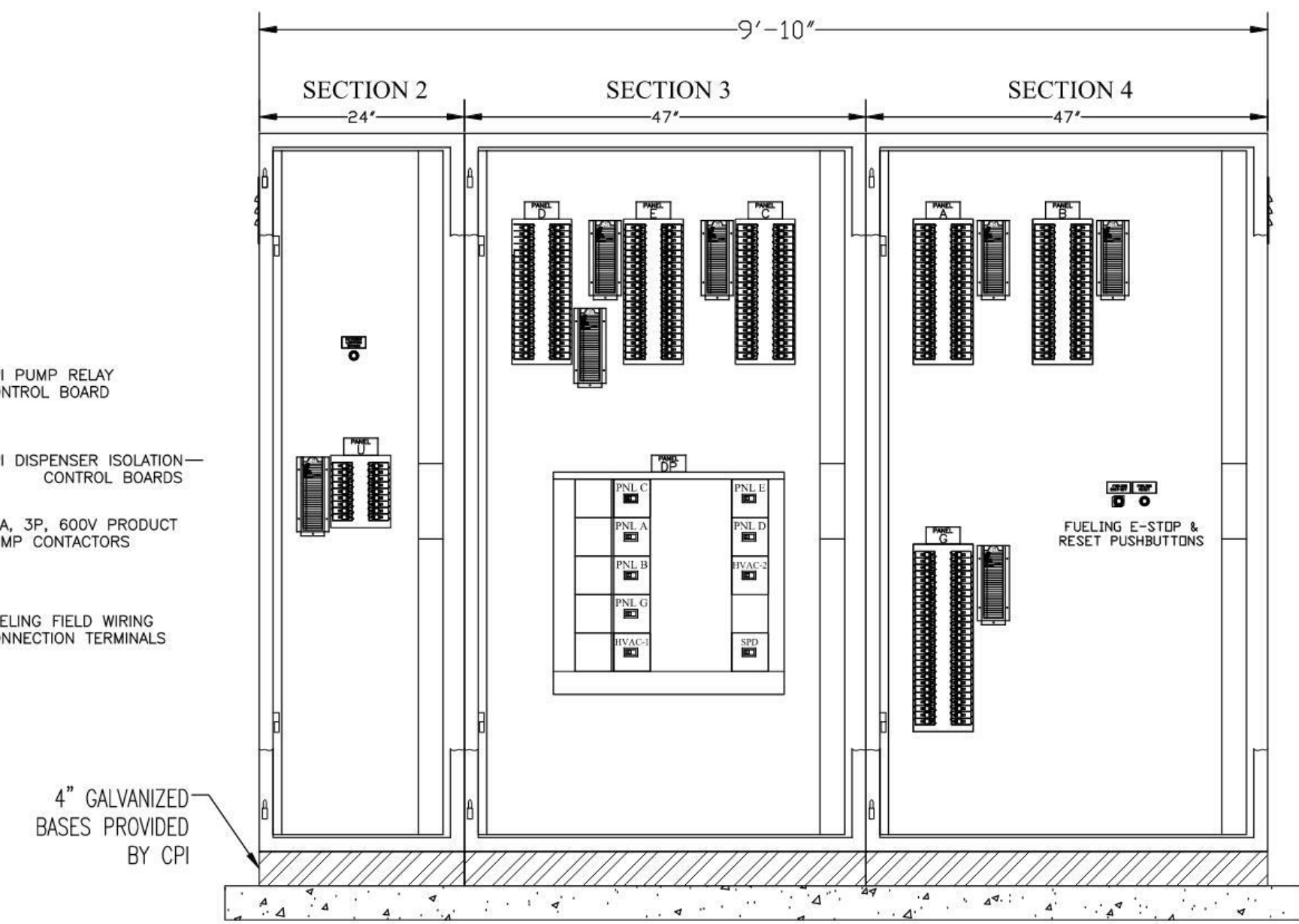
FACTORY FEEDER SCHEDULE		
PANEL	(MPS, WBS)	(# OF CONDUCTORS) SIZE
A	225A, 4W	(4) #4/0 AWG
B	225A, 4W	(4) #4/0 AWG
C	225A, 4W	(4) #4/0 AWG
D	225A, 4W	(4) #4/0 AWG
E	225A, 4W	(4) #4/0 AWG
G	125A, 4W	(4) #1 AWG
U	30A, 3W	(3) #10 AWG

WIRE LEGEND	
FACTORY WIRING:	
FIELD WIRING:	

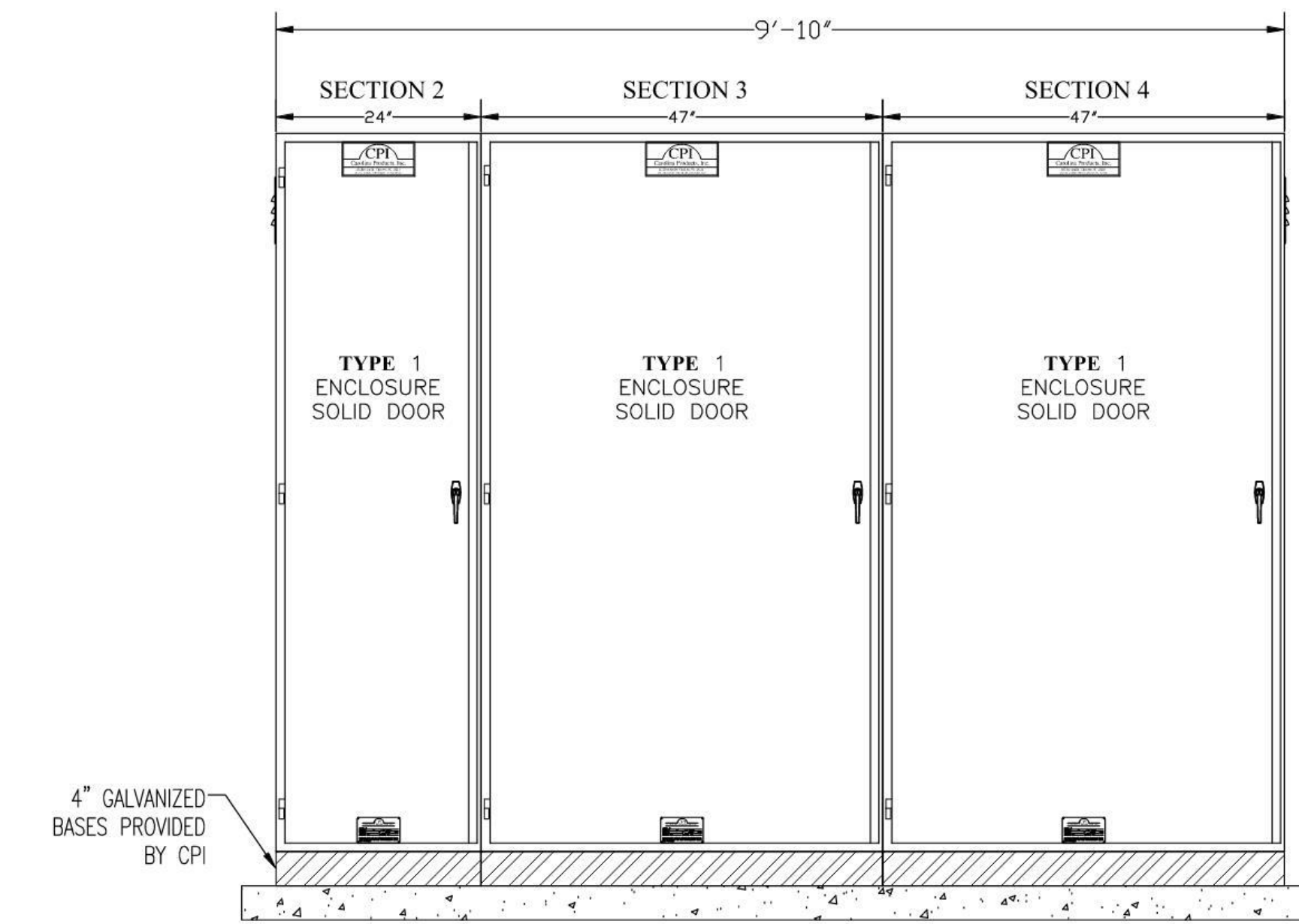
**TYPE 3R INTERIOR CABINET VIEW**



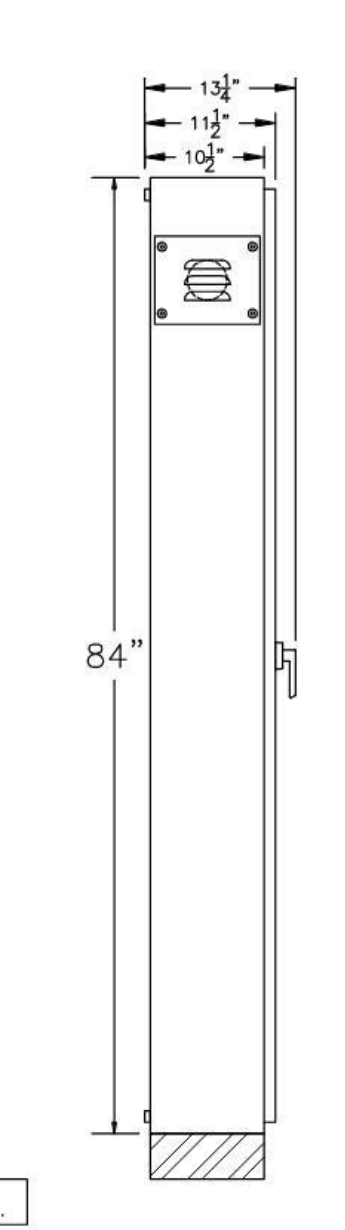
**TYPE 3R DEADFRONT CABINET VIEW**



**TYPE 3R EXTERIOR CABINET VIEW**



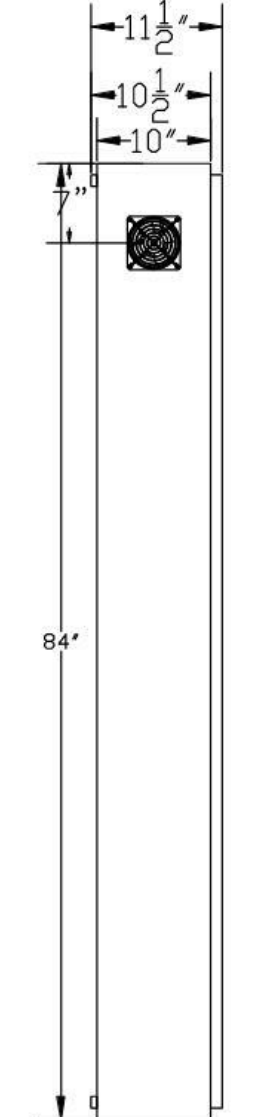
**TYPE 3R SIDE VIEW**



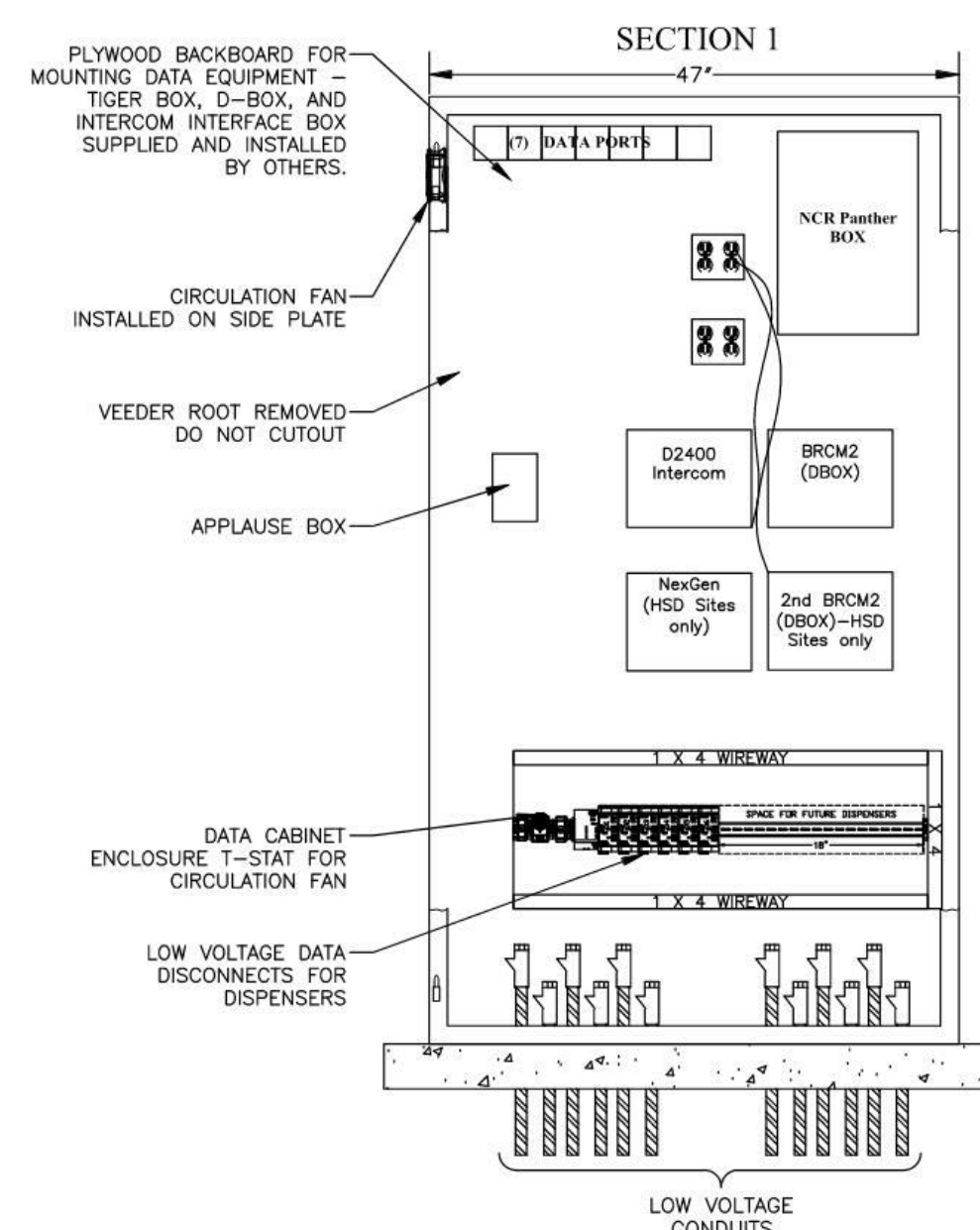
**CPI LOW VOLTAGE PANEL**

INSIDE BUILDING

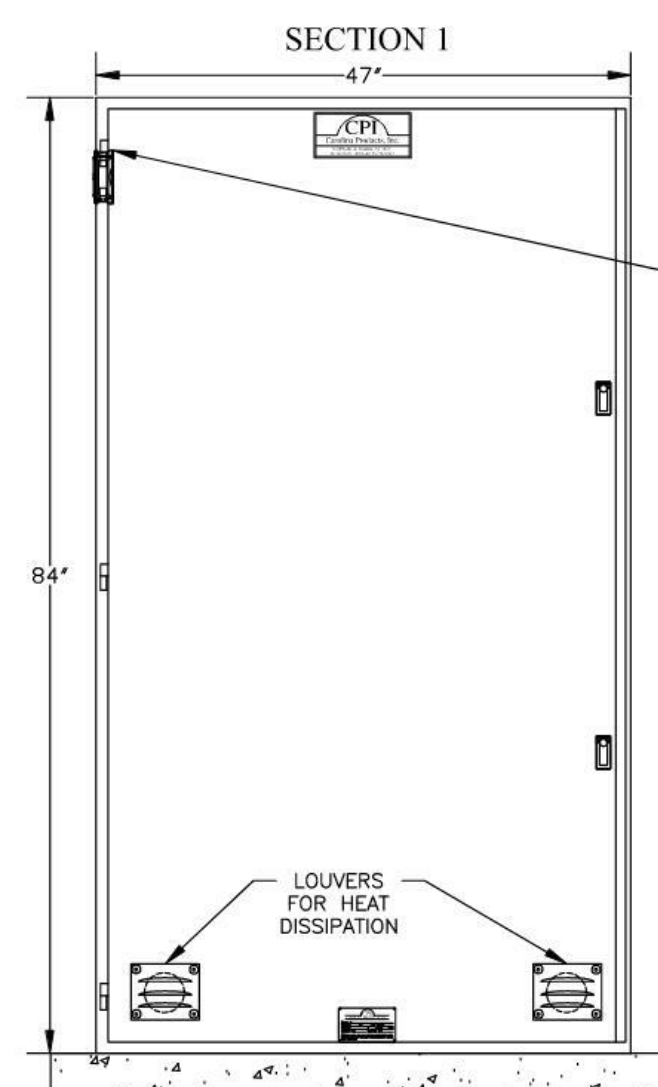
**SIDE VIEW**



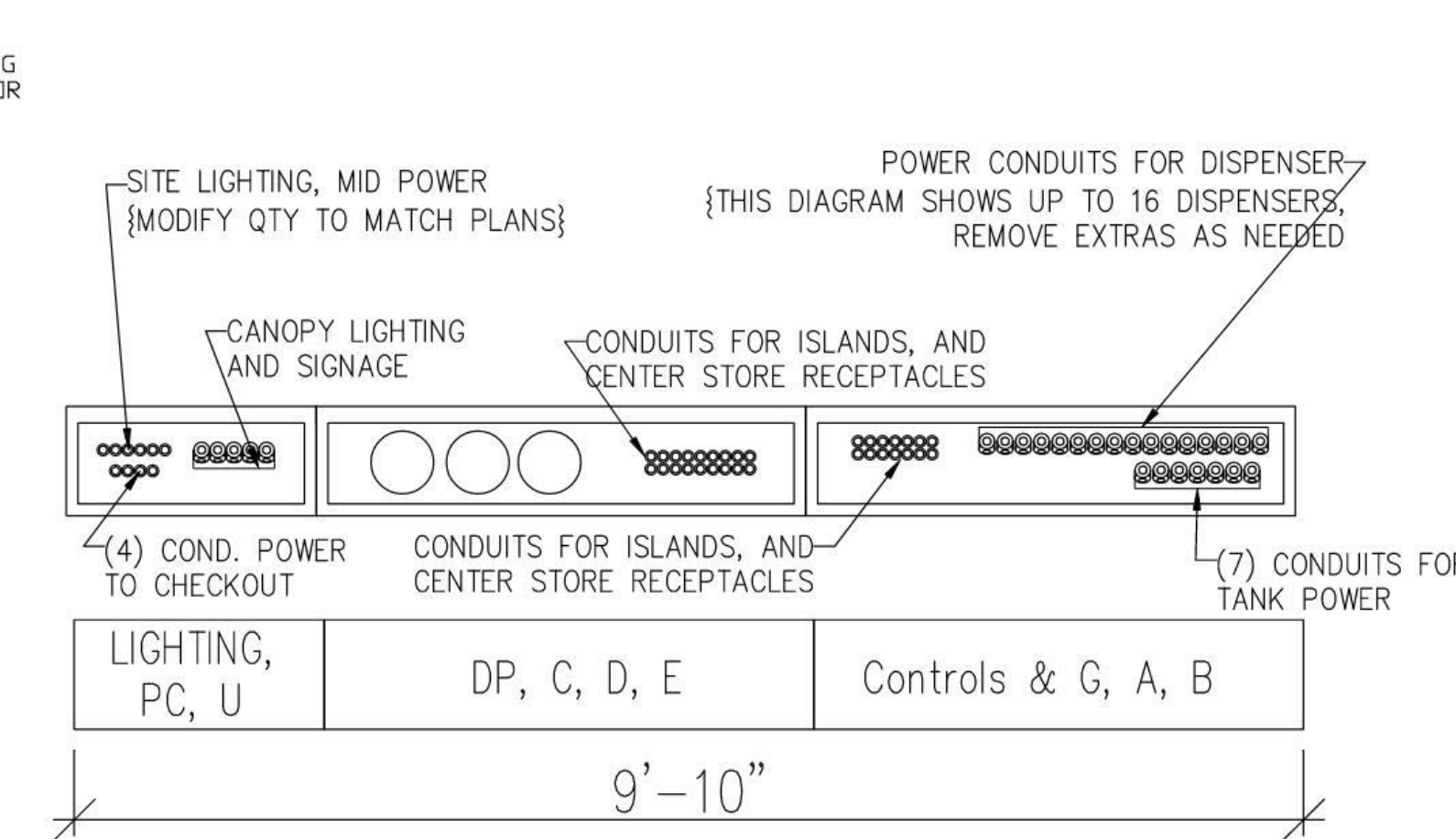
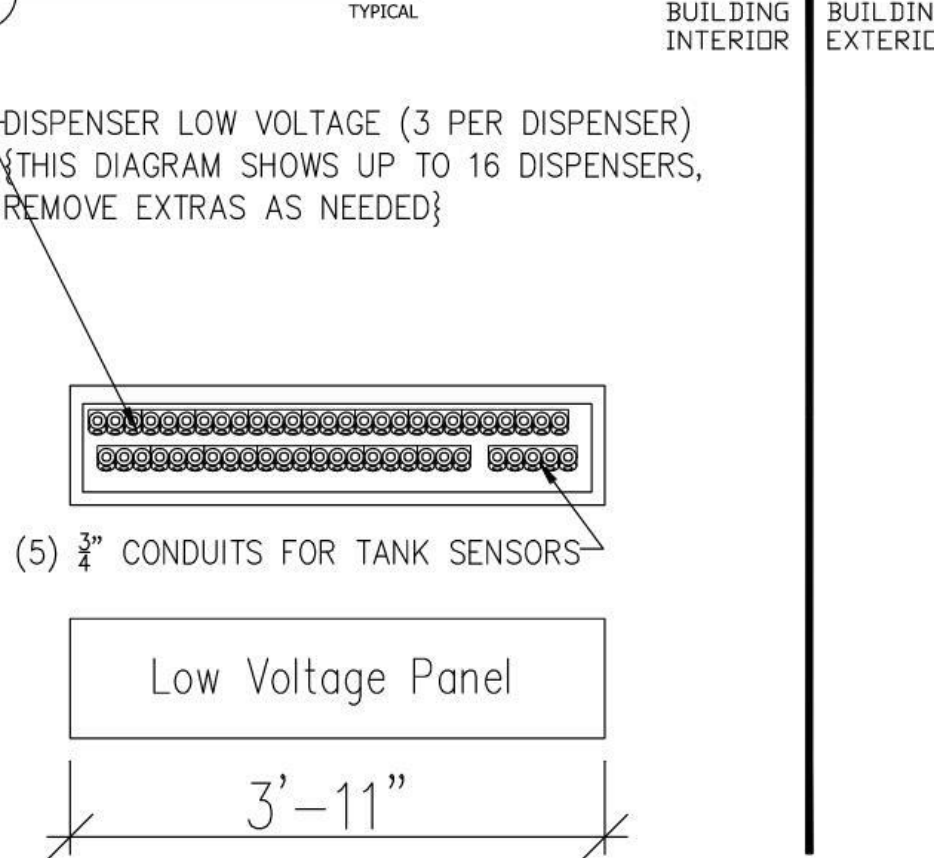
**INTERIOR CABINET VIEW**



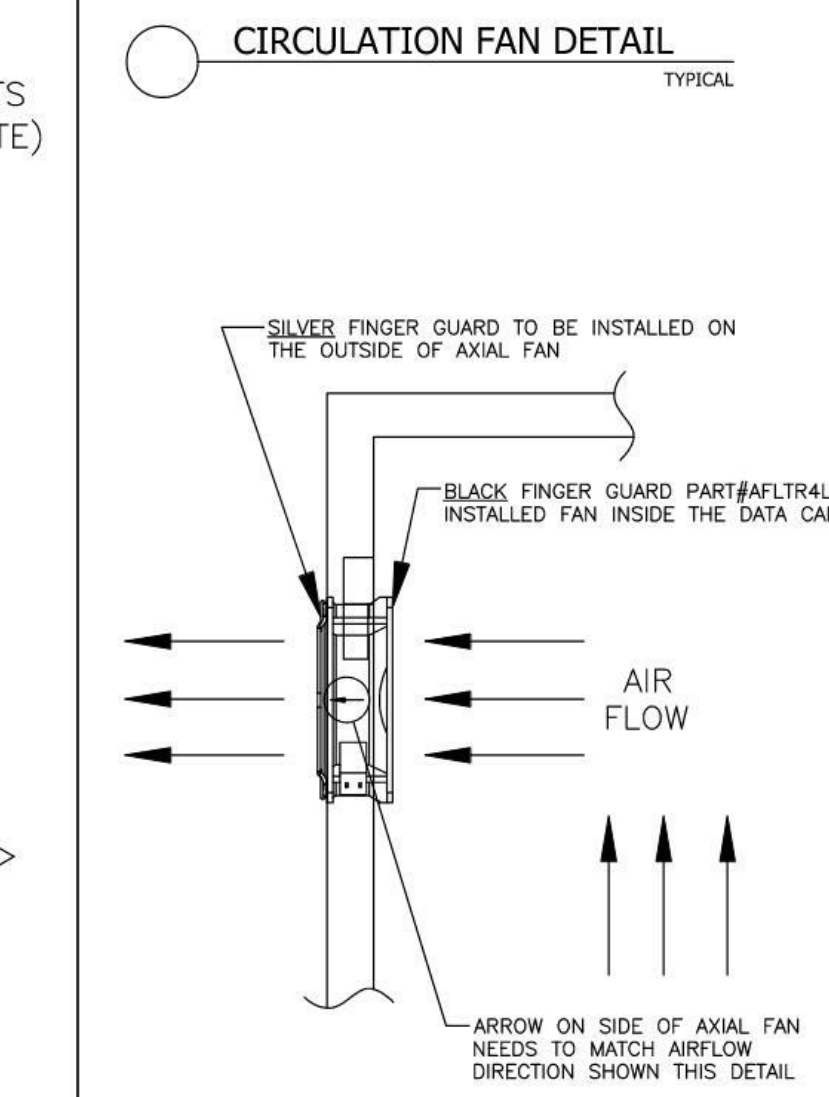
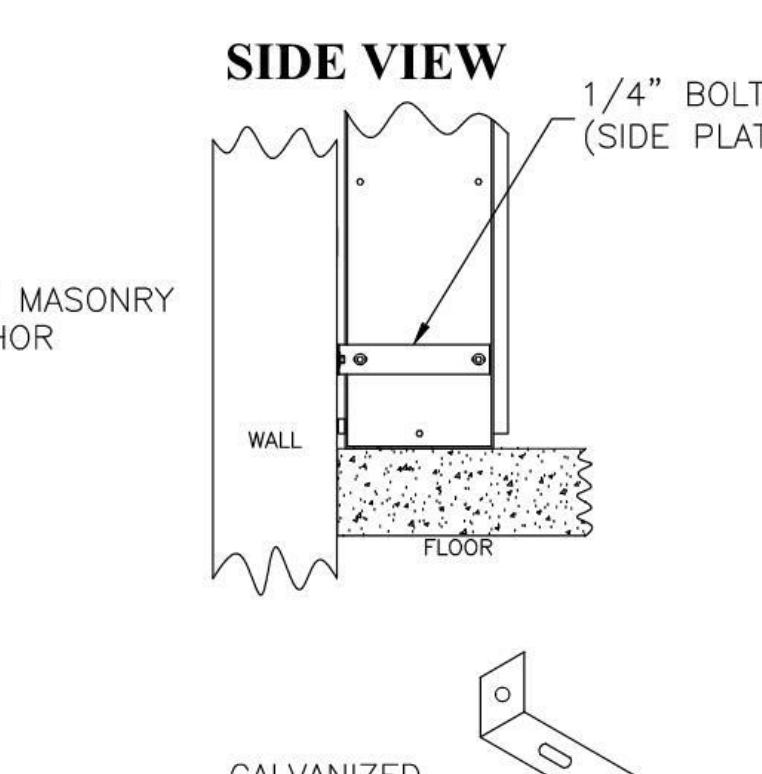
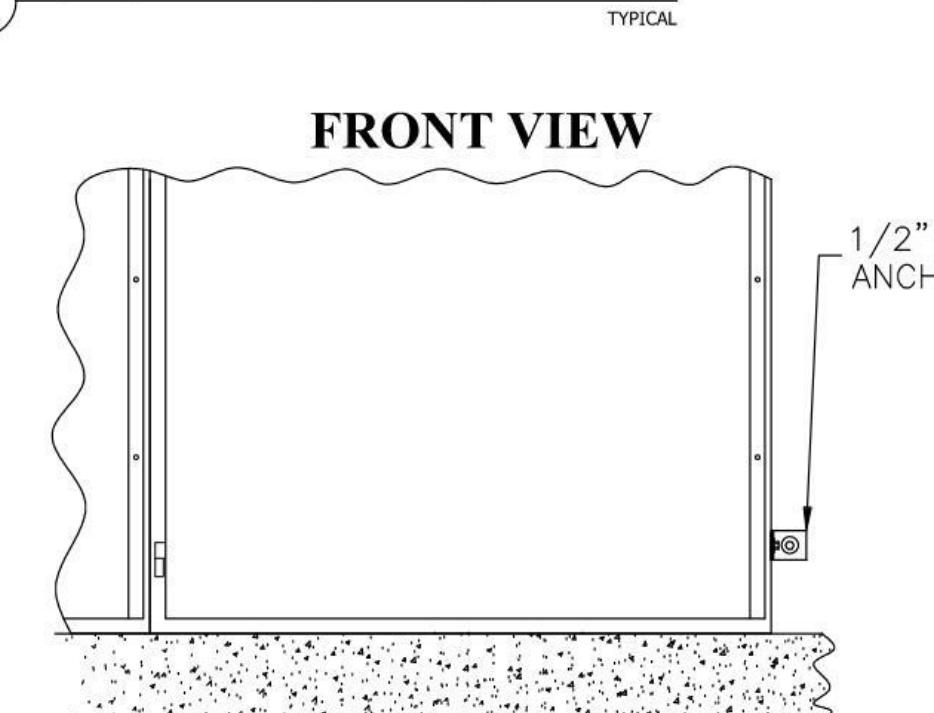
**EXTERIOR CABINET VIEW**



**ROUGH-IN DETAIL**



**CPI CABINET INSTALLATION DETAIL**



**NOTE:**  
USE (1) MOUNTING BRACKET FOR EACH SIDE OF UNITIZED SWITCHGEAR SYSTEM. SYSTEMS CONSISTING OF MORE THAN 3 CABINETS MAY REQUIRE 1 OR MORE BRACKETS AFFIXED TO THE TOP OF THE CABINET GROUP.



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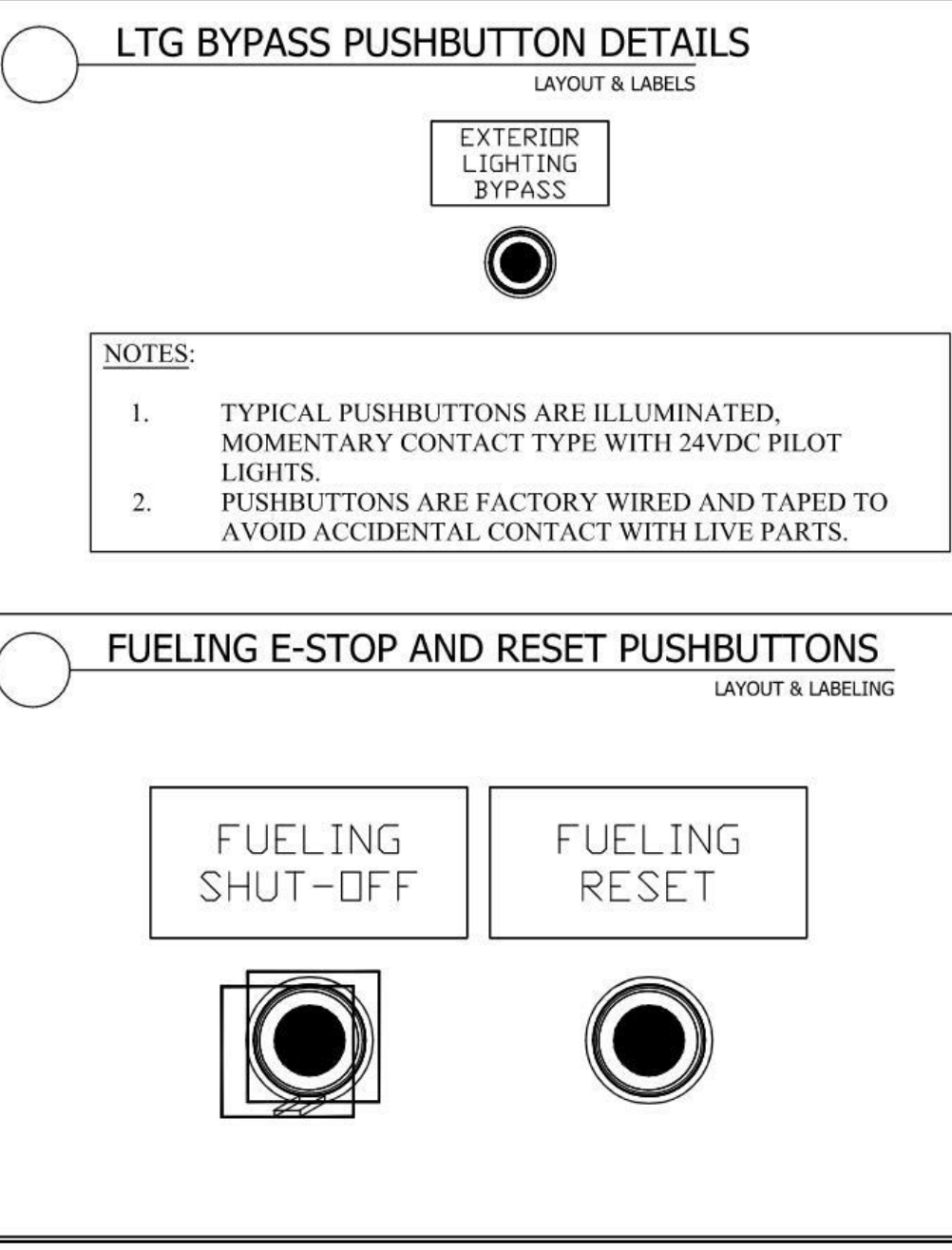
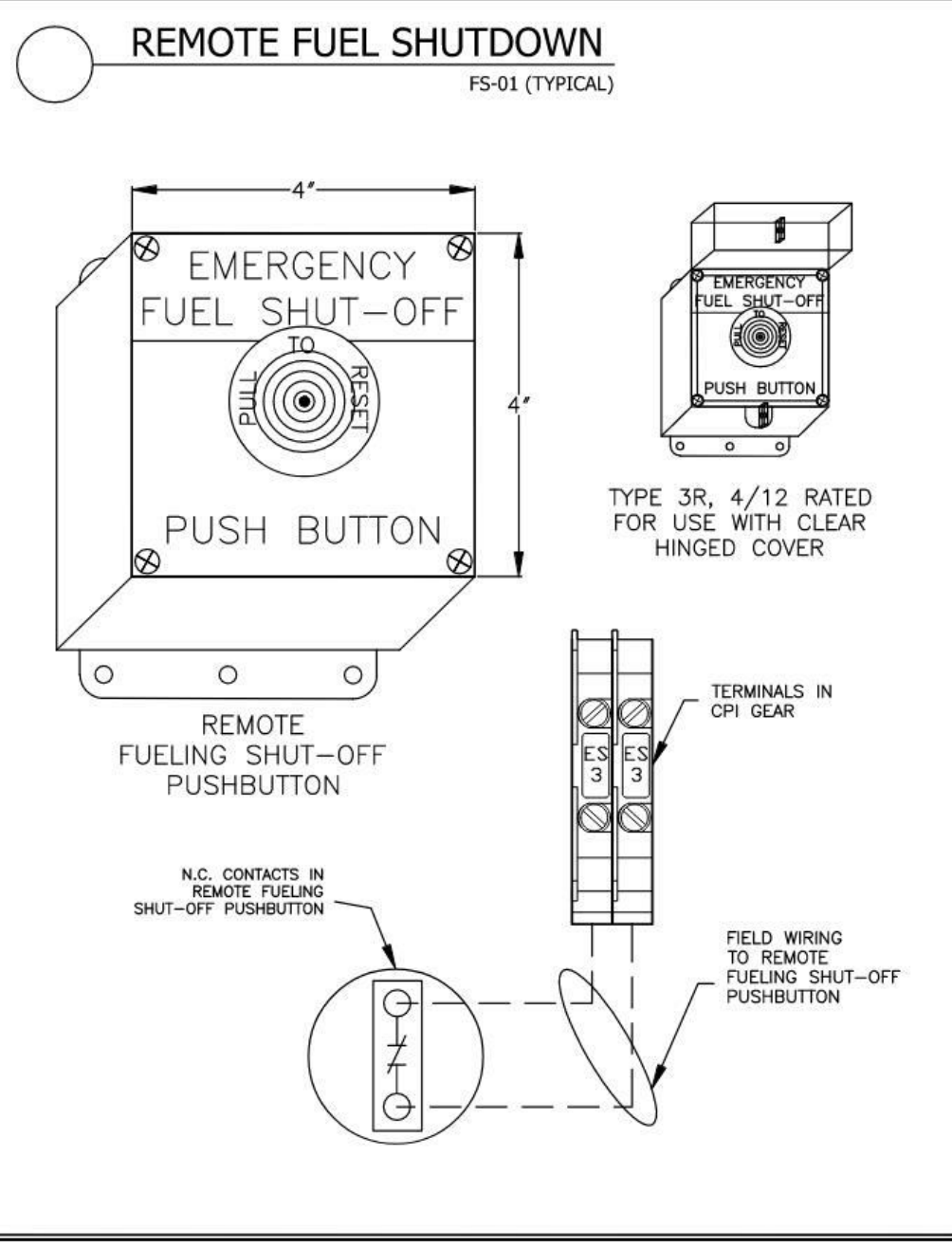
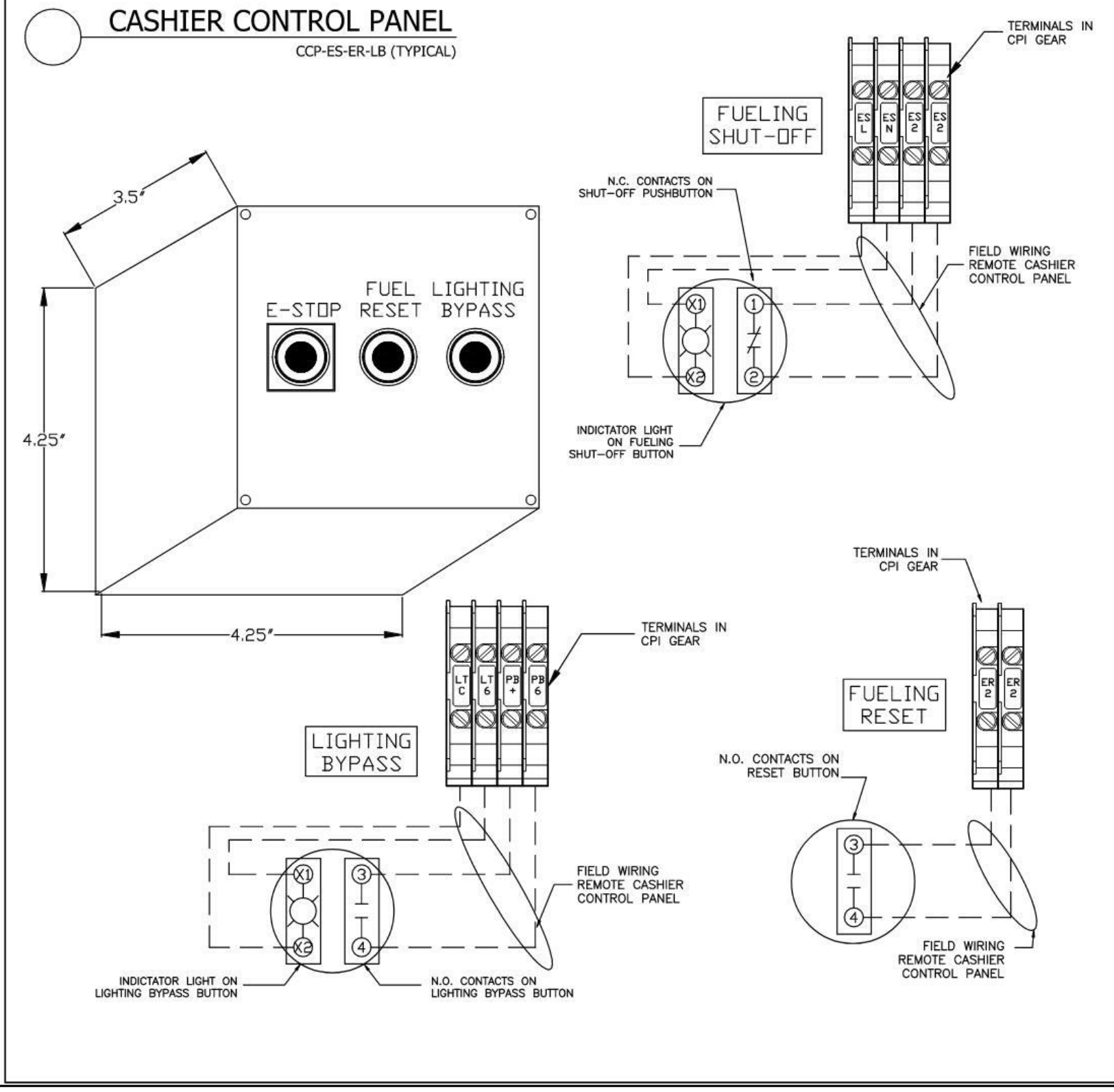
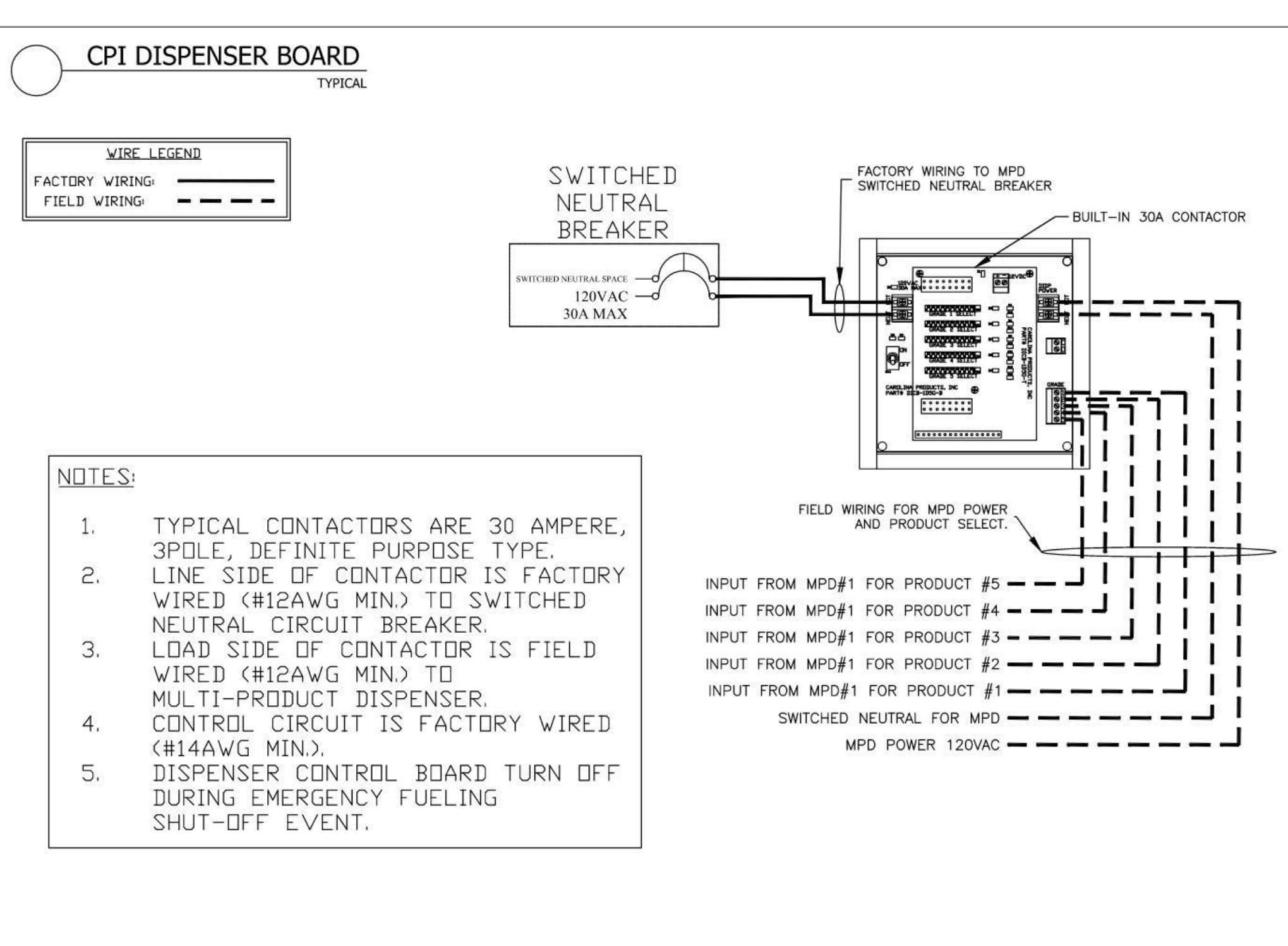
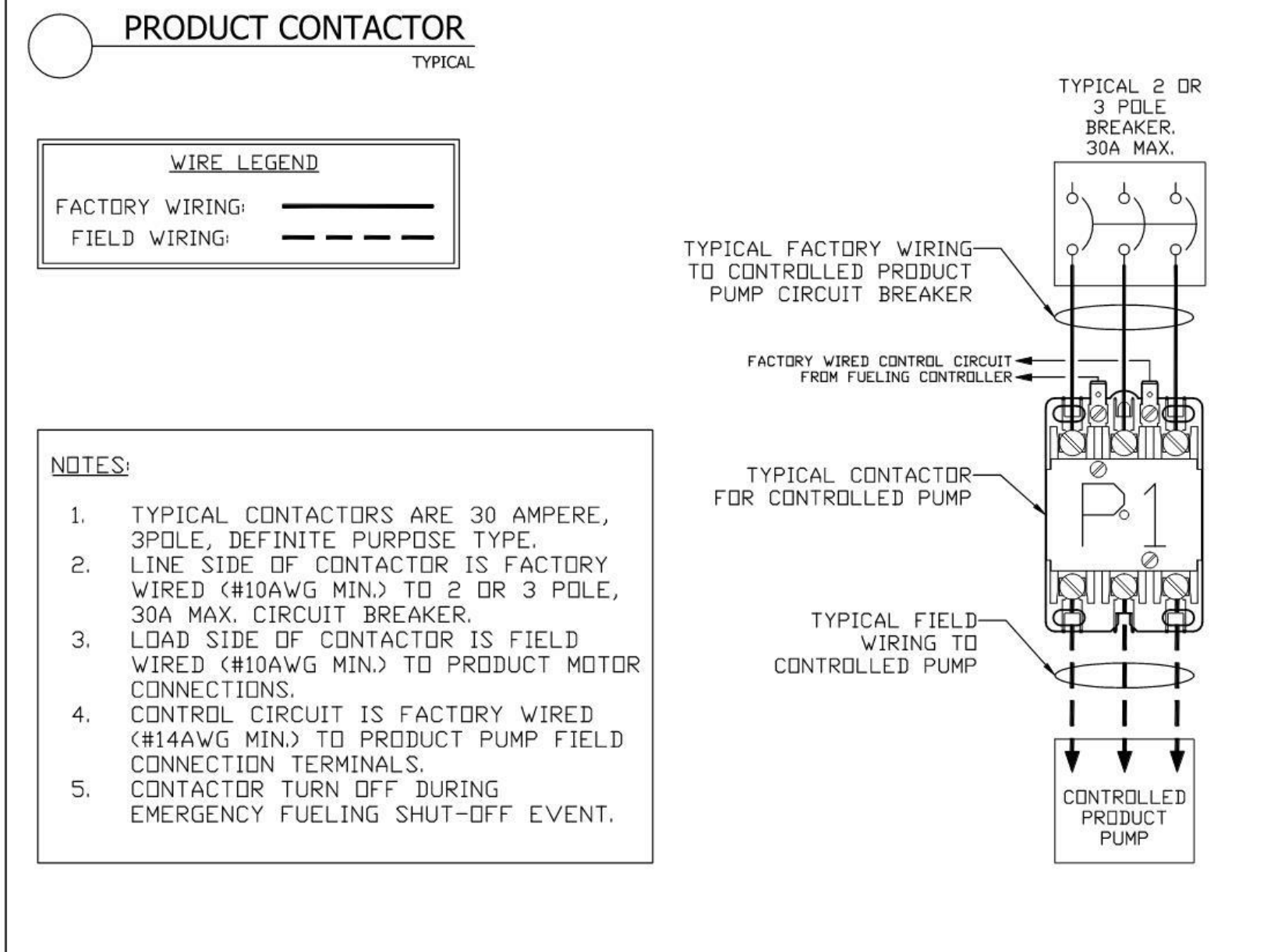
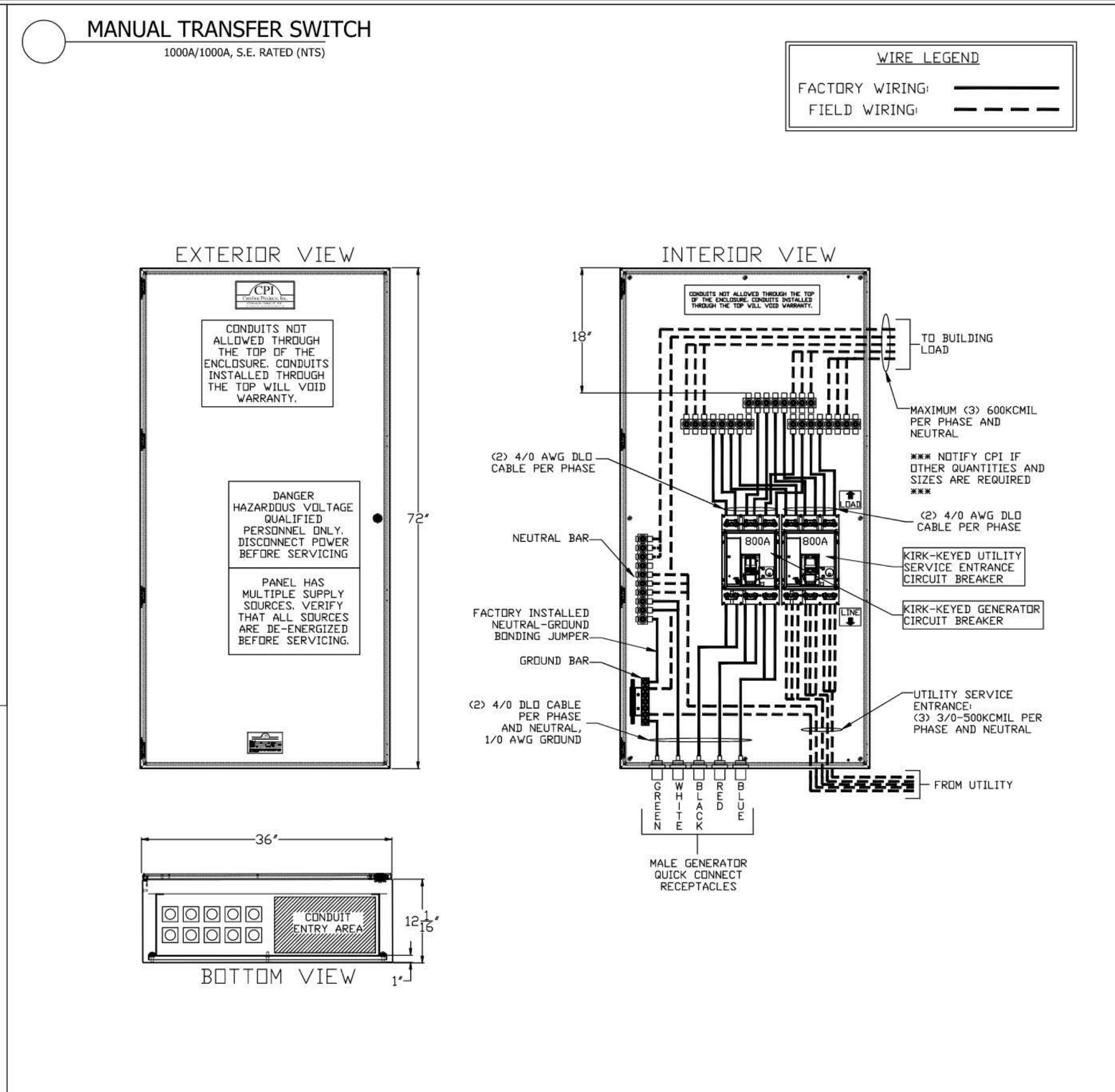
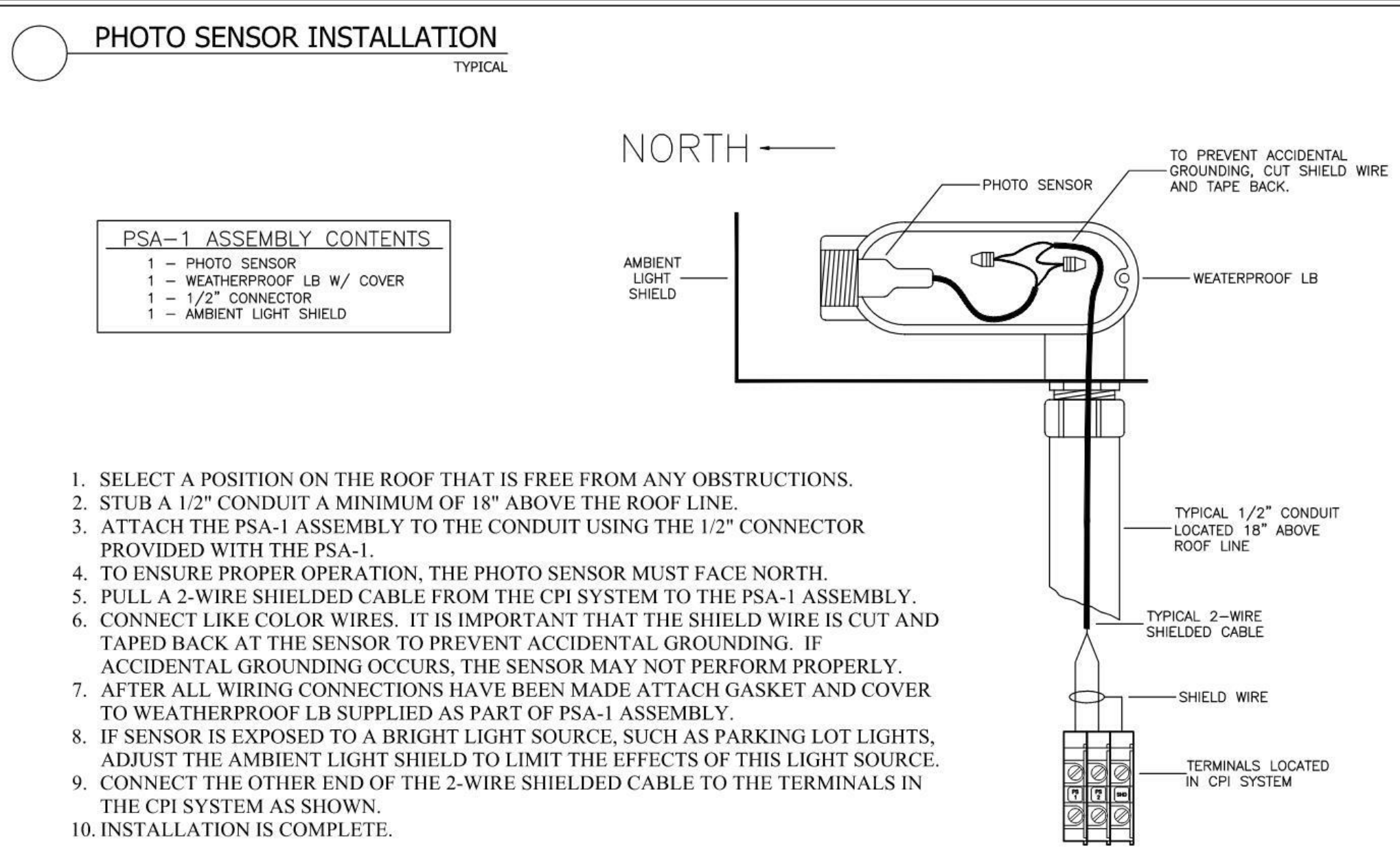
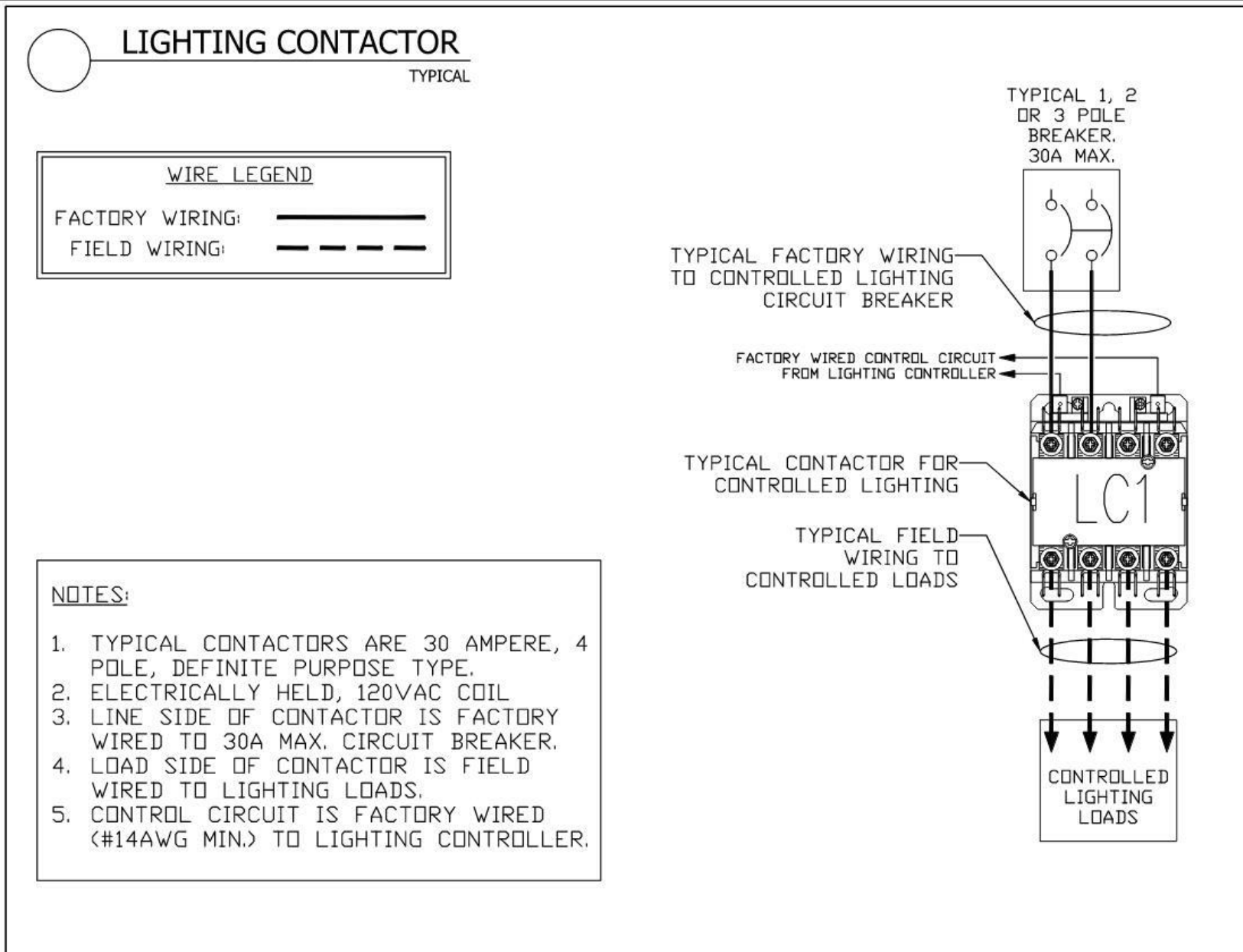
PROTOCOL# R1.2 12/XX/22



**CIRCLE K STORE**  
PROJECT NUMBER: 22130

**VENDOR EQUIPMENT DRAWINGS**

**E6.1**



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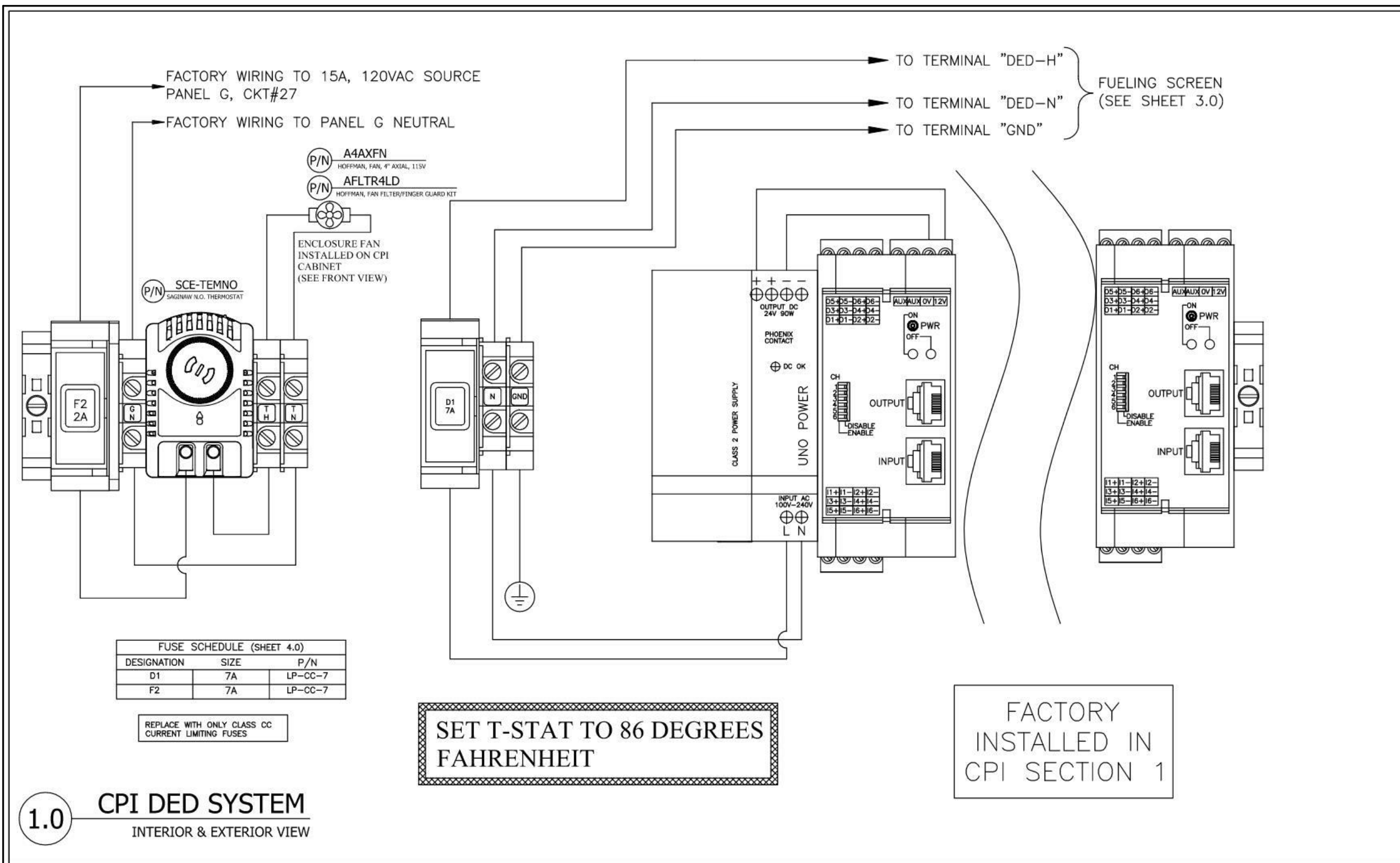
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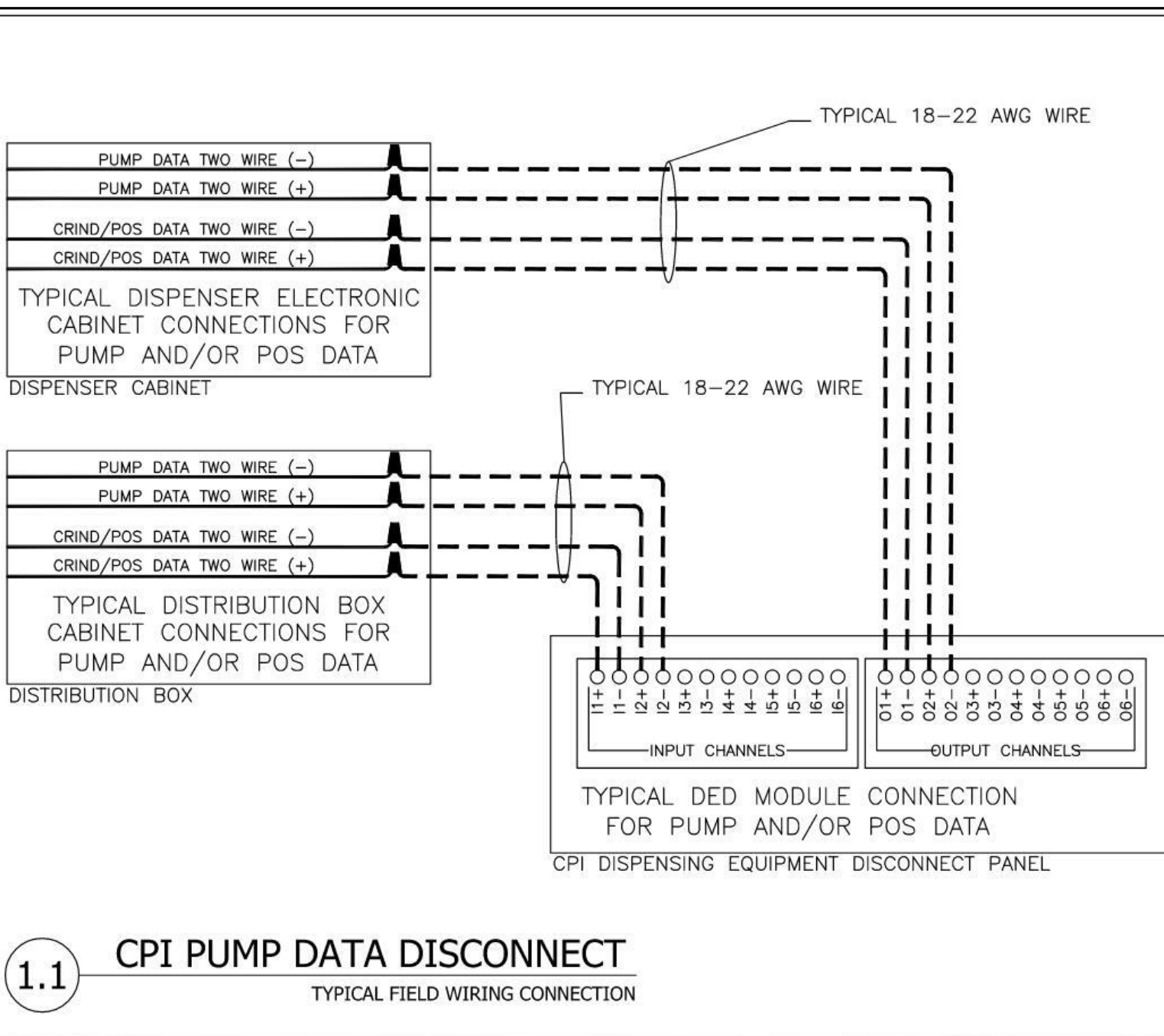
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 PROJECT NUMBER: 22130

VENDOR EQUIPMENT DRAWINGS

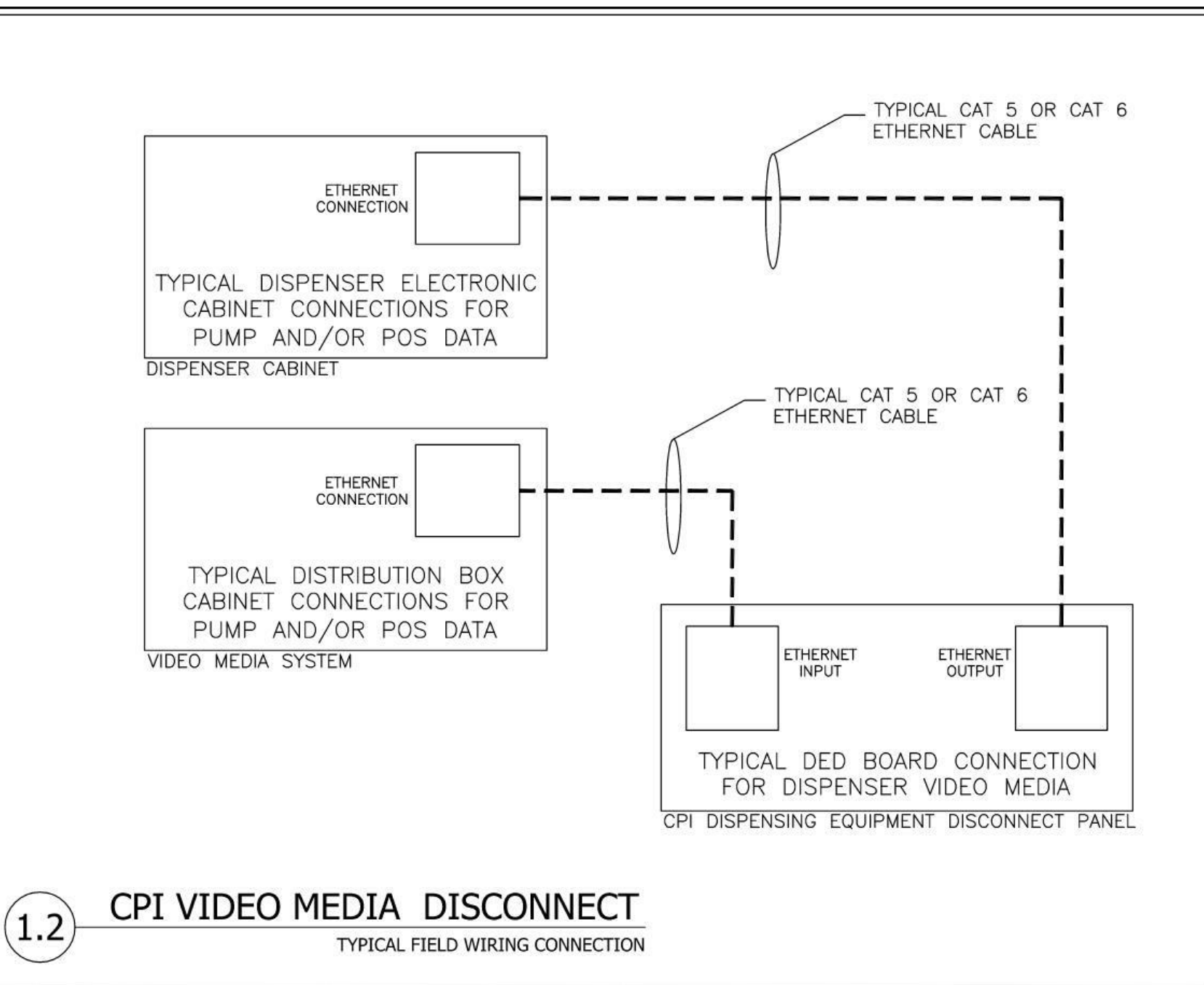
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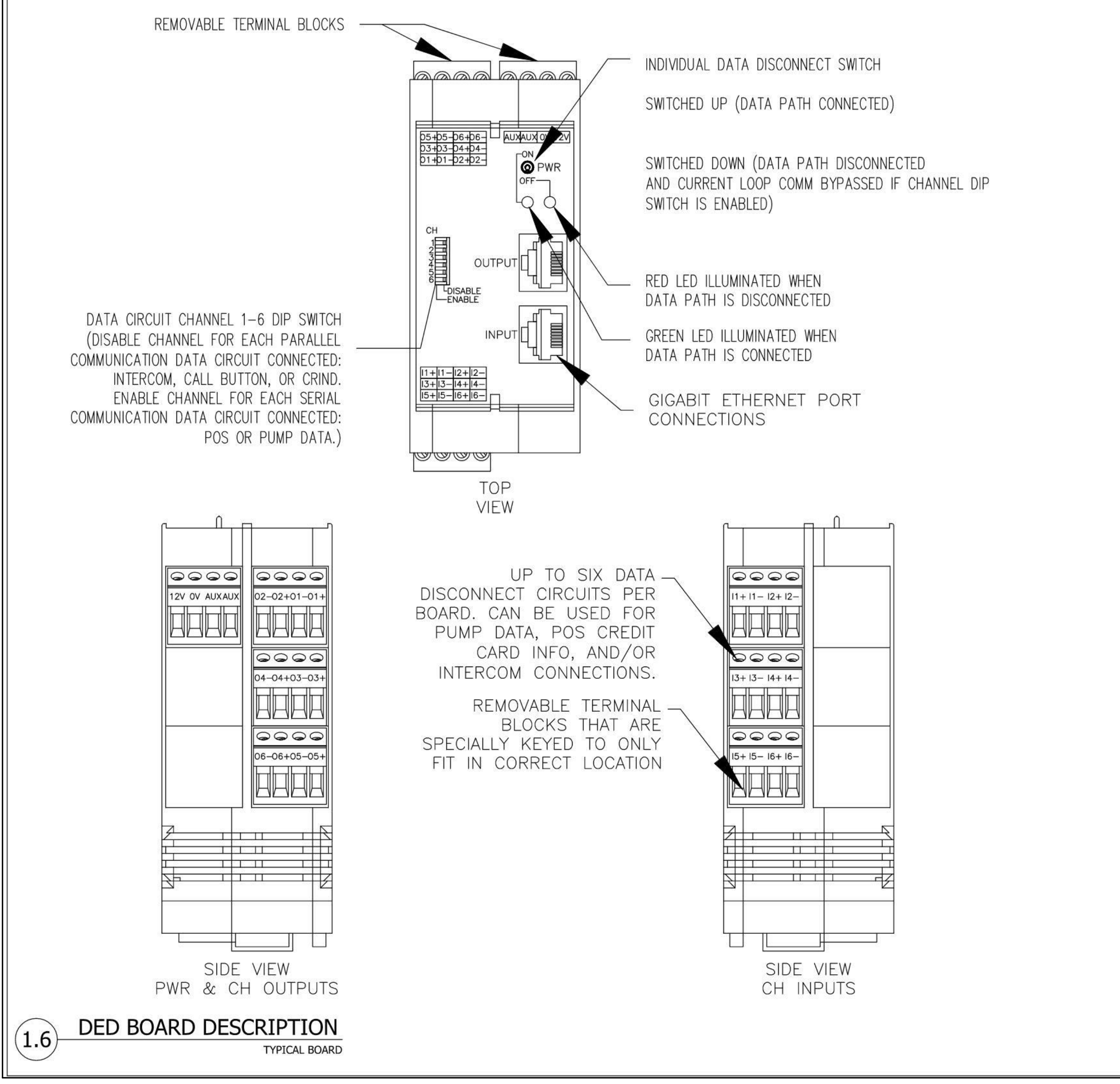
1.0 CPI DED SYSTEM  
INTERIOR & EXTERIOR VIEW



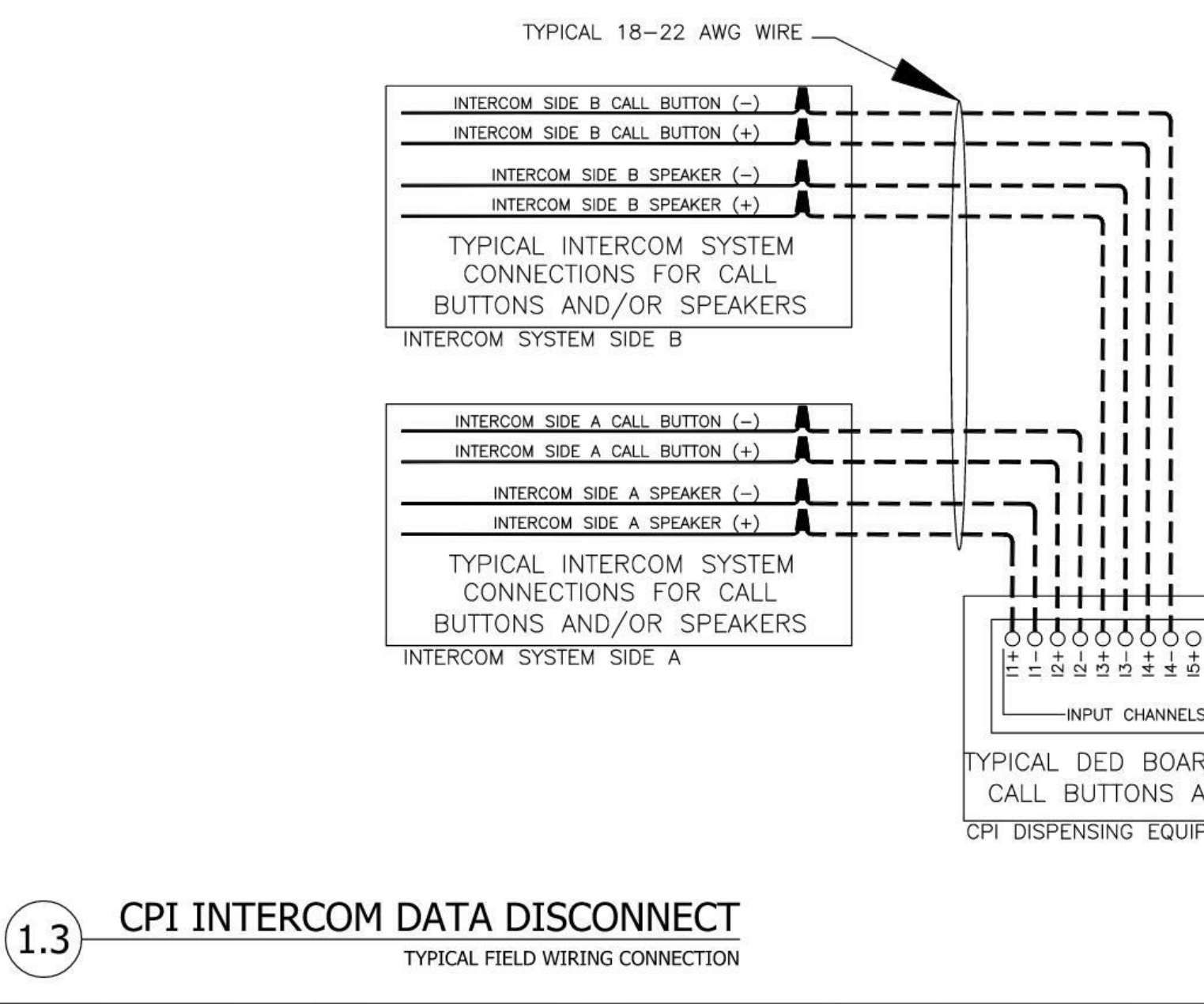
1.1 CPI PUMP DATA DISCONNECT  
TYPICAL FIELD WIRING CONNECTION



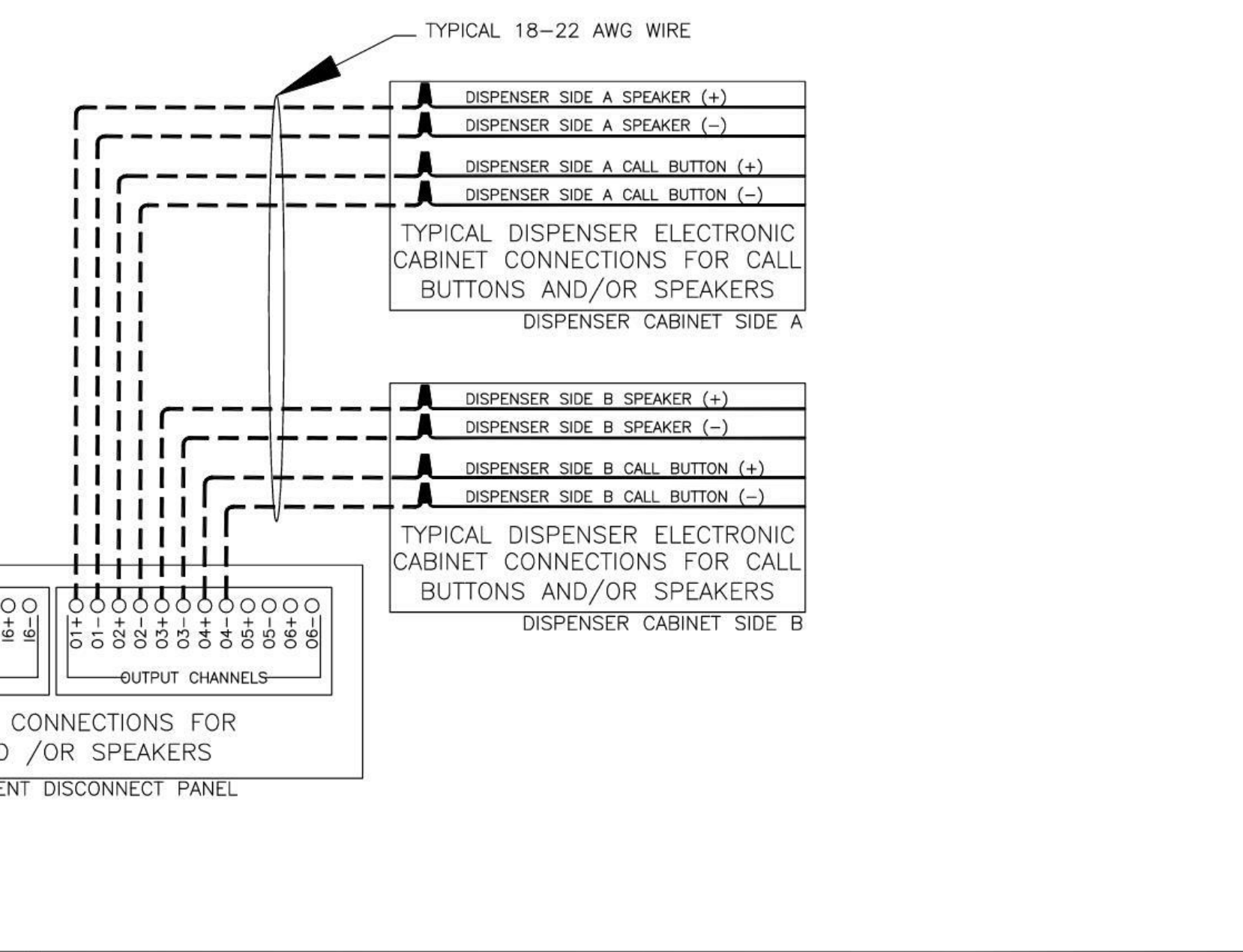
1.2 CPI VIDEO MEDIA DISCONNECT  
TYPICAL FIELD WIRING CONNECTION



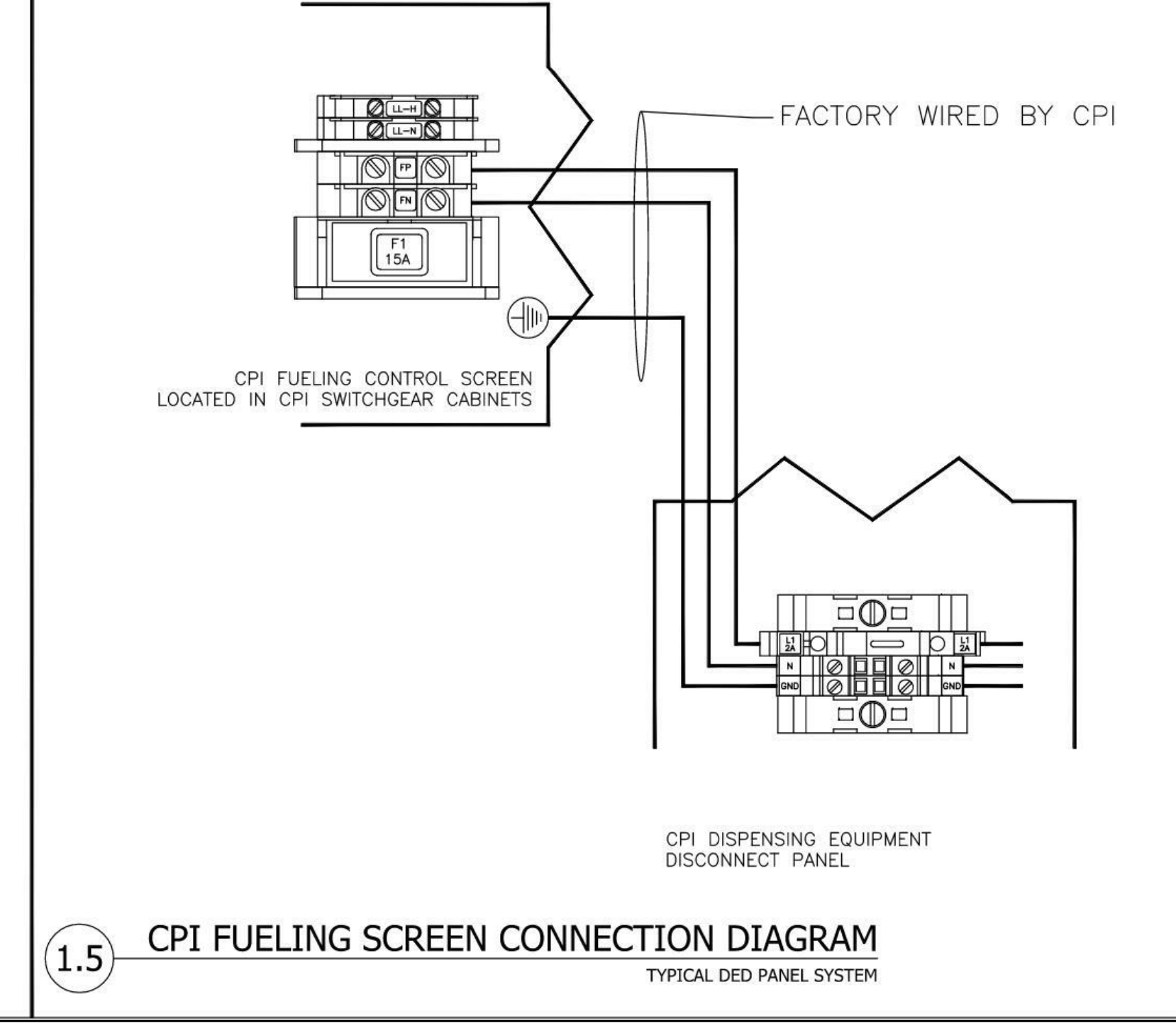
1.6 DED BOARD DESCRIPTION  
TYPICAL BOARD



1.3 CPI INTERCOM DATA DISCONNECT  
TYPICAL FIELD WIRING CONNECTION



1.4 DED WIRING DIAGRAM  
SAMPLE WIRING BETWEEN 2 LINES OF DED UNITS



1.5 CPI FUELING SCREEN CONNECTION DIAGRAM  
TYPICAL DED PANEL SYSTEM

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**CIRCLE K STORE**  
**PROJECT NUMBER: 22130**

**VENDOR EQUIPMENT DRAWINGS**

**E6.3**

PANELBOARD A. Bus Rating: 225 A, Main Rating Upstream: 225A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Series, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 13.80, 18.46, 16.86, 144 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

PANELBOARD B. Bus Rating: 225 A, Main Rating Upstream: 225A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Series, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 6.27, 5.69, 8.17, 47 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

PANELBOARD C. Bus Rating: 225 A, Main Rating Upstream: 225A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Series, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 10.83, 11.45, 11.22, 94 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

PANELBOARD D. Bus Rating: 225 A, Main Rating Upstream: 225A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Series, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 10.51, 11.23, 11.14, 94 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

PANELBOARD E. Bus Rating: 225 A, Main Rating Upstream: 225A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Fully, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 16.87, 17.11, 17.11, 143 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

PANELBOARD G. Bus Rating: 125 A, Main Rating Upstream: 125A, Location: DIST. DP. Voltage: 208Y/120 V, Mains Type: M.L.O., Busbar Material: CU. System: 3Ø, 4W, A.I.C. Rating: 65,000 A, Ground Busbar: Yes. Mounting: Cabinet, Fully / Series: Series, Neutral Busbar: 100%. Status: New, Trim: Door-In-Door, Branch Breaker Type: Bolt-on, IG Ground Busbar: No. Nema Rating: 3R, Feed Type: Bottom, Skirt Type: None. Terminations: 75°C CU, Sections: 1. Furnished by Owner, installed by EC. Table with columns: CCT Load No., Load Description, Notes, Brkr Size, Poles, A, B, C, Poles, Brkr Size, Notes, Load Description, Load Code, CCT No. Demand Loads May Vary From Connected Loads Because of Demand Factors. Total Connect Load: 6.57, 5.28, 5.38, 44 A. Demand Load Table with columns: Load Codes, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

- ### PANELBOARD CIRCUIT NOTES
1. TERMINATE GROUND ON ISOLATED GROUND BUS.
  2. INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-OFF FOR MAINTENANCE).
  3. INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-ON FOR CRITICAL LOAD).
  4. GFI BREAKER FOR PERSONNEL PROTECTION (5MA).
  5. REFER TO ONE-LINE DIAGRAM FOR CONDUCTOR SIZES.
  6. PROVIDE LOCK-OFF DEVICE TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS PER NEC.
  7. FIRE ALARM CIRCUIT. PROVIDE RED MARKING AND LABEL "FIRE ALARM CIRCUIT CONTROL" ON BREAKER.
  8. OPTIONAL EQUIPMENT: REVISE TO SPACE FILLER IF NOT USED ON SITE.
  9. FACTORY INSTALLED WIRING IN UNITIZED SWITCHGEAR.



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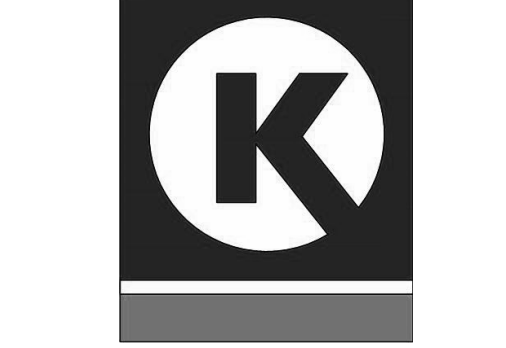
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ANGIER, NC

9706 KENNEBEC CHURCH ROAD, ANGIER, NC

PROTOCOL# R1.2 12/XX/22



CIRCLE K STORE

PROJECT NUMBER: 22130

PANEL SCHEDULES

E7.0

### 20A WIRE SIZING SCHEDULE

ALL WIRE SIZES SHOWN ON PANEL SCHEDULES ARE INTENDED TO BE MINIMUM ACCEPTABLE WIRE SIZE.

THE FOLLOWING SCHEDULE IS TO BE USED TO SIZE WIRE FOR 20 AMP CIRCUITS (120 AND 277 VOLT). LENGTHS (IN FEET) ARE INTENDED TO BE MAXIMUM.

120 VOLT	#12	#10	#8	#6
1-5 AMPS	200 FT.	325 FT.	490 FT.	770 FT.
6-10 AMPS	100 FT.	160 FT.	245 FT.	385 FT.
11-15 AMPS	70 FT.	110 FT.	165 FT.	255 FT.

277 VOLT	#12	#10	#8	#6
1-5 AMPS	480 FT.	760 FT.	1170 FT.	1865 FT.
6-10 AMPS	240 FT.	380 FT.	585 FT.	930 FT.
11-15 AMPS	160 FT.	250 FT.	390 FT.	620 FT.

### GROUND WIRE SIZING CHART

BRKR AMPS	PHASE	WIRE SIZE				
		12	10	8	6	4
15-20	PHASE	12	10	8	6	4
	GROUND	12	10	8	6	4
25-30	PHASE	10	8	6	4	3
	GROUND	10	8	6	4	3
35-50	PHASE	8	6	4	3	2
	GROUND	10	8	4	4	4
60	PHASE	6	4	3	2	1
	GROUND	10	6	6	4	4
70	PHASE	6	4	3	2	1
	GROUND	8	4	4	3	2
80-90	PHASE	4	3	2	1	1/0
	GROUND	8	6	4	4	3
100	PHASE	3	2	1	1/0	2/0
	GROUND	8	6	4	4	3

PER NEC 250.122(B)

### GENERAL PANELBOARD NOTES

- CIRCUIT BREAKERS IN PANELBOARDS SHALL BE U.L. LISTED SERIES RATED WITH SPECIFIED 65K AIC UPSTREAM CIRCUIT BREAKER AND DOWNSTREAM 10K AMP RATED BRANCH CIRCUIT BREAKERS.
- PROVIDE A PERMANENT LABEL READING "CAUTION - SERIES RATED SYSTEM 65K, "X" AMPS AVAILABLE." IDENTIFIED (LABELED) REPLACEMENT COMPONENTS REQUIRED. (REFER TO SHORT CIRCUIT CALCULATIONS FOR ACTUAL AMPS TO BE LABELED).
- CIRCUIT BREAKERS SHALL BE A BOLT-ON TYPE, U.L. LISTED SERIES-RATED COMBINATION FROM PUBLISHED COMBINATION LISTINGS.

### PANELBOARD CIRCUIT NOTES

- TERMINATE GROUND ON ISOLATED GROUND BUS.
- INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-OFF FOR MAINTENANCE).
- INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-ON FOR CRITICAL LOAD).
- GFI BREAKER FOR PERSONNEL PROTECTION (5MA).
- REFER TO ONE-LINE DIAGRAM FOR CONDUCTOR SIZES.
- PROVIDE LOCK-OFF DEVICE TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS PER NEC.
- FIRE ALARM CIRCUIT. PROVIDE RED MARKING AND LABEL "FIRE ALARM CIRCUIT CONTROL" ON BREAKER.
- OPTIONAL EQUIPMENT: REVISE TO SPACE FILLER IF NOT USED ON SITE.
- FACTORY INSTALLED WIRING IN UNITIZED SWITCHGEAR.

CCT No.	Load Code	Load Description	Notes	Brkr Size	Poles	A	B	Poles	Brkr Size	Notes	Load Description	Load Code	CCT No.
1	2	SELF CHECK POS SYSTEM		20 A	1	1.32	0.18		1	20 A	REC. CCTV SERVICE	2	2
3	2	SELF CHECK POS SYSTEM		20 A	1		1.32	1.20	1	20 A	REC. BACK OFFICE COMPUTER	2	4
5	2	REC. SECONDARY COMMUNICATION		20 A	1	0.36	0.96		1	20 A	T101 SAFE REC	2	6
7	2	REC. DATA COMMUNICATIONS		20 A	1		0.36	0.36	1	20 A	RECS. LOTTO EQ 44	2	8
9	--	FILLER SPACE	--	--	1	--	--	--	1	--	FILLER SPACE	--	10
11	--	FILLER SPACE	--	--	1	--	--	--	1	--	FILLER SPACE	--	12
13	--	FILLER SPACE	--	--	1	--	--	--	1	--	FILLER SPACE	--	14
15	--	FILLER SPACE	--	--	1	--	--	--	1	--	FILLER SPACE	--	16
17	--	FILLER SPACE	--	--	1	--	--	--	1	--	FILLER SPACE	--	18

Total Connect Load: 2.82 3.24 KVA  
Total Amps: 24 A 27 A Amps

CCT No.	Load Codes	Load Description	Notes	Brkr Size	Poles	A	B	C	Remarks
1	2; 4; 10; 1; 3	PANEL A	9	225 A	3	13.80	18.46	16.86	
2	2; 4; 5; 1; 3	PANEL B	9	225 A	3	6.27	5.69	8.17	
3	2; 4; 5; 0; 3	PANEL C	9	225 A	3	10.83	11.45	11.22	
4	2; 4; 5	PANEL D	9	225 A	3	10.51	11.23	11.14	
5	2; 4	PANEL E	9	225 A	3	16.87	17.11	17.11	
6	2; 4; 3; 11	PANEL G	9	125 A	3	6.57	5.28	5.38	
7	4	RTU 1		30 A	3	3.48	3.48	3.48	
8	4	RTU 2		45 A	3	4.68	4.68	4.68	
9	--	FILLER SPACE	--	--	3	--	--	--	
10	11	SPD	9	30 A	3	0.01	0.01	0.01	

Total Connect Load: 73.03 77.38 78.05 KVA  
Total Amps: 609 A 650 A 655 A Amps

Load Codes	Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
0	Lighting - Non-Continuous	0.54	125.00%	0.68	
1	Lighting - Continuous	5.61	125.00%	7.01	Total Conn. Load: 238.45
2	Receptacles	40.12	62.46%	25.06	Total Est. Demand: 206.15
3	Special Loads	38.28	100.00%	38.28	Total Conn. Current: 634 A
4	Motors	98.99	100.00%	98.99	Total Est. Demand Current: 572 A
5	Kitchen (Commercial)	33.34	65.00%	21.67	
6	Heating	0.00	0.00%	0.00	
7	Cooling	0.00	0.00%	0.00	
9	Computer Outlets	0.00	0.00%	0.00	Spare Capacity: 228 A
10	Exterior Lighting	11.52	125.00%	14.40	Spare Capacity Percent: 72
11	Miscellaneous - Continuous	0.06	125.00%	0.06	
12	Modular Furniture Outlets	0.00	0.00%	0.00	

Fault Point	Panel / Transformer	Source (Fault Point)	Source I (amps)	Conduit Type	Wire/Bus Size	'C' value	E (volts)	L (length)	X'FMR KVA	X'FMR Z	f	M	Isc
F1	SERVICE DISC		65,000										65,000
F2	DIST. DP	1	55,476	M	4 Set(s) of 3/0	12,844	208	25			0.032	0.76	53,089
F3	PANEL 'A'	2	53,089	M	1 Set(s) of 4/0	15,082	208	5			0.082	0.92	46,303
F4	PANEL 'B'	2	53,089	M	1 Set(s) of 4/0	15,082	208	5			0.136	0.88	46,303
F5	PANEL 'C'	2	53,089	M	1 Set(s) of 4/0	15,082	208	5			0.082	0.92	46,303
F6	PANEL 'D'	2	53,089	M	1 Set(s) of 4/0	15,082	208	5			0.082	0.92	46,303
F7	PANEL 'E'	2	53,089	M	1 Set(s) of 4/0	15,082	208	5			0.082	0.92	46,303
F8	PANEL 'G'	2	53,089	M	1 Set(s) of 1	7,293	208	5			0.169	0.86	46,303
F9	LTG. CONTACT	3	46,303	M	1 Set(s) of 12	617	208	5			4.929	0.17	11,226
F10	PANEL 'U'	6	46,303	M	1 Set(s) of 10	981	208	5			1.163	0.46	20,688
F11	SERVICE DISC		65,000										65,000
F12	PANEL 'CWA'	11	55,476	M	2 Set(s) of 4/0	12,844	208	250			6.321	0.14	11,489



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1605 N 2ND ST JOB NO.: 29894  
ROGERS, AR 72756 DESIGNED BY: LHO

### REVISION

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Feb 15, 2023

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PROJECT

SAG

QUALITY

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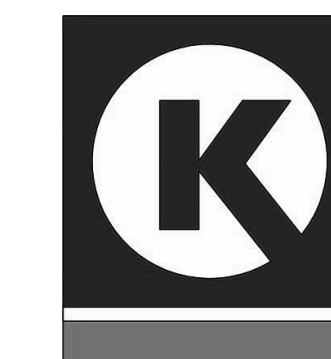
PROJECT

### CIRCLE K STORES, INC.

### ANGIER, NC

9706 KENNEBEC CHURCH ROAD, ANGIER, NC

PROTOCYCLE# R1.2 12/XX/22



CIRCLE K STORE

PROJECT NUMBER: 22130

### PANEL SCHEDULES

### E7.1



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PROJECT

**CIRCLE K STORES, INC.**  
**DET CW**  
**ANGIER, NC**

9706 KENNEBEC CHURCH ROAD,  
ANGIER, NC

PROTOTYPE CYCLE # R3.2 12/19/22



CIRCLE K STORE

PROJECT NUMBER: 22130

**ELECTRICAL SPECIFICATIONS**

**E0.1-CW**

**1. SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS**

- A. THE WORK OF EACH OF THE ELECTRICAL SECTIONS INCLUDES FURNISHING AND INSTALLING THE MATERIAL, EQUIPMENT, AND SYSTEMS COMPLETE AS SPECIFIED AND/OR INDICATED ON THE DRAWINGS. THE ELECTRICAL INSTALLATIONS, WHEN FINISHED, SHALL BE COMPLETE AND COORDINATED, READY FOR SATISFACTORY SERVICE.
- B. THE WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE AND OTHER LOCAL CODES, THE 2020 EDITION OF THE NORTH CAROLINA ELECTRICAL CODE AND THE 2010 ADA STANDARDS.
- C. THE CONTRACTOR SHALL MAKE APPLICATION AND PAY FOR ALL PERMITS, LICENSES AND INSPECTIONS AS REQUIRED UNDER THE ABOVE CODES.
- D. THE GENERAL ARRANGEMENT OF CONDUIT, WIRING AND EQUIPMENT SHALL BE AS IDENTIFIED ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE SITE, STRUCTURAL, AND FINISH CONDITIONS AFFECTING HIS WORK AND SHALL ARRANGE SUCH WORK ACCORDINGLY, PROVIDING SUCH FITTINGS AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.
- E. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SERVICES NECESSARY FOR AND REASONABLY INCIDENTAL TO THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK AND RELATED SYSTEMS AS INDICATED ON THE DRAWINGS OR AS NECESSARY TO PROVIDE A COMPLETE SYSTEM.
- F. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY WIRING, LIGHTING AND CONSTRUCTION POWER FOR ALL TRADES AS REQUIRED TO COMPLETE THE PROJECT.
- G. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND COMPLETED IN A FIRST CLASS WORKMANLIKE MANNER. ALL MATERIALS SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS. ALL EQUIPMENT AND SYSTEMS SHALL BE APPROVED BY UL OR SIMILAR NATIONALLY ACCEPTED TESTING AGENCY SUCH AS ETL TESTING LABORATORIES.
- H. THE CONTRACTOR SHALL VISIT THE SITE AND OBSERVE THE CONDITIONS UNDER WHICH THE WORK SHALL BE COMPLETED. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONTRACT FOR ANY ERROR OR NEGLIGENCE IN THE CONTRACTOR'S PART.
- I. THE CONTRACTOR SHALL SUBMIT DETAILED DIMENSIONED SHOP DRAWINGS, TOGETHER WITH WIRING DIAGRAMS, SPECIFICATIONS, OPERATING DATA, AND/OR CATALOG CUTS FOR ALL EQUIPMENT.
- J. A THOROUGH TEST SHALL BE MADE PRIOR TO ENERGIZING THE SYSTEM TO DEMONSTRATE THAT THE SYSTEM IS ENTIRELY FREE FROM GROUND FAULTS, SHORT CIRCUITS, AND OPEN CIRCUITS; THAT THE RESISTANCE TO GROUND OF ALL NON-GROUNDED CIRCUITS, BEFORE AND AFTER CONNECTION OF EQUIPMENT MEETS THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND IEEE STANDARDS/RECOMMENDATIONS.
- K. IDENTIFY ALL MOTOR STARTERS, SWITCHES, CONTROLS, PANELBOARDS, SWITCHBOARDS, TERMINAL BOARDS, CONTROL CENTERS AND OTHER EQUIPMENT. IDENTIFICATION PLATES SHALL BE LAMINATED PLASTIC, BLACK AND WHITE ENGRAVED LETTERS. LETTERING FOR CONTROL CENTERS, CONTROL PANELS, METERING AND INSTRUMENT PANELS SHALL BE 3/8" HIGH.
- L. THE MATERIAL AND WORKMANSHIP OF ALL PARTS OF THE ELECTRICAL INSTALLATION SPECIFIED HEREIN SHALL BE GUARANTEED UNCONDITIONALLY FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY OR GRAND OPENING, WHICH EVER COMES FIRST.
- M. UPON COMPLETION OF THE ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL DELIVER TO THE OWNER ONE SET OF SCANNED DIGITAL PRINTS OF ELECTRICAL CONTRACT DRAWINGS WHICH SHALL BE LEGIBLY MARKED IN RED TO SHOW ALL ADDITIONS, CHANGES AND DEPARTURES OF THE INSTALLATION AS COMPARED WITH THE ORIGINAL DESIGN. THEY SHALL BE SUITABLE FOR USE IN PREPARATION OF RECORD DRAWINGS.
- N. THE CONTRACTOR SHALL PREPARE A RECORD AND INFORMATION MANUAL. THE MANUAL SHALL BE SCANNED INTO A DIGITAL FORMAT AND FORWARDED TO CIRCLE K CONSTRUCTION. PROVIDE THE FOLLOWING DATA IN THE RECORD AND INFORMATION MANUAL:
- CUT SHEETS OF ALL EQUIPMENT WITH TECHNICAL SPECIFICATIONS.
  - OPERATION AND MAINTENANCE PROCEDURES.
  - SERVICING INSTRUCTIONS.
  - COPIES OF PANELBOARD DIRECTORIES.
  - COPIES OF WARRANTIES.
  - LIST OF LAMPS SHOWING QUANTITY, TYPE, WATTAGE, MANUFACTURER, CATALOG NUMBER, ETC., FOR EACH FIXTURE TYPE.
  - COPIES OF TEST REPORTS.

O. EXACT LOCATIONS OF OUTLETS SHALL BE COORDINATED WITH DOOR SWINGS AND VARIOUS PROTRUSIONS. MOUNTING HEIGHTS OF THE VARIOUS ELECTRICAL DEVICES SHALL BE AS FOLLOWS:

SWITCHES	46" AFF TO CENTER OF BOX
RECEPTACLES	20" AFF TO CENTER OF BOX
TELEPHONE OUTLETS	20" AFF TO CENTER OF BOX
EXIT LIGHTS	CENTERED BETWEEN CEILING AND TOP OF DOOR (UP TO 1'-0" ABOVE DOOR), SURFACE OR CEILING MOUNTED AS SHOWN
DISCONNECTING SWITCHES	52" AFF TO CENTER OF SWITCH

- P. PROVIDE A DISCONNECT SWITCH FOR EACH MOTOR AS SHOWN ON THE DRAWINGS SIZED AS REQUIRED TO MEET THE NEC AND PROVIDE ALL WIRING CONNECTIONS FROM SOURCE. PROVIDE REQUIRED VOLTAGE.
- Q. SEAL ALL CONDUIT PENETRATIONS THRU RATED WALLS AND FLOORS TO MAINTAIN FIRE INTEGRITY. REFER TO ARCHITECTURAL DRAWING FOR FIRE WALL LOCATIONS.
- R. ELECTRICAL CONTRACTOR SHALL VERIFY ALL VOLTAGES OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

**2. SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS**

- A. INSTALL ALL WIRING CONDUIT EXCEPT AS OTHERWISE INDICATED. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUIT EMBEDDED IN CONCRETE SHALL BE 3/4" MINIMUM. INSTALL ALL CONDUIT CONCEALED UNLESS ON UNFINISHED WALLS, ON UNFURRED CEILINGS OR MECHANICAL EQUIPMENT SPACES. PROVIDE CONDUIT AS FOLLOWS:
- RIGID STEEL CONDUIT FOR WORK EXPOSED TO WEATHER OR EMBEDDED IN CONCRETE OR MASONRY.
  - GALVANIZED ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR EXPOSED WORK, CONCEALED WORK ABOVE SUSPENDED CEILINGS, AND WITHIN INTERIOR PARTITIONS OR NON-MASONRY WALLS.
  - FLEXIBLE METAL CONDUIT IN SHORT LENGTHS (6' MAXIMUM) FOR THE CONNECTION OF RECESSED LIGHTING FIXTURES AND MOTORS.
  - LIQUID TIGHT FLEXIBLE METAL CONDUIT WHEREVER MOISTURE MAY BE PRESENT AND MOTORS IN MECHANICAL EQUIPMENT SPACES.
  - POLYVINYLCHLORIDE (PVC) SCHEDULE 40 AND 80 CONDUIT WITH GROUND CONDUCTOR FOR UNDERGROUND OUTSIDE OF BUILDING (SITE) INSTALLATION AS PERMITTED BY 2008 NEC ARTICLE 352.
- B. INSTALL CONDUITS PARALLEL AND PERPENDICULAR TO WALLS AND INTERIOR SURFACES. CLEAN AND PLUG AND PROVIDE A PULL LINE IN EACH CONDUIT LEFT EMPTY. USE MANUFACTURED ELBOWS AND SCREW JOINTED CONDUIT FITTINGS. USE CAPPED BUSHINGS OR "PUSH PENNY" PLUGS. ALL FITTINGS SHALL BE STEEL OR MALLEABLE IRON. ALL EMT FITTINGS SHALL BE COMPRESSION TYPE.
- C. ALL OUTLET, SWITCH AND JUNCTION BOXES, SHALL BE STAINLESS STEEL BY STEEL CITY, RACO, APPLETON, VALEN, OR EQUIVALENT. OUTLET BOXES IN CONCRETE CONSTRUCTION SHALL BE OCTAGONAL. NO "THRU-WALL" BOXES SHALL BE USED IN PARTITIONS. ALL BOXES SHALL BE FURNISHED WITH APPROPRIATE COVERS.
- D. JUNCTION AND PULL BOXES SHALL BE FURNISHED AND INSTALLED AS INDICATED OR WHERE REQUIRED TO FACILITATE PULLING OF WIRES OR CABLES. BOXES FOR EXTERIOR WORK SHALL BE CAST ALUMINUM OR GALVANIZED CAST IRON TYPE WITH THREADED HUBS, UNLESS OTHERWISE DIRECTED. GASKETED COVER PLATES SHALL BE FURNISHED FOR OUTDOOR INSTALLATIONS.
- E. BUILDING WIRE, UNLESS OTHERWISE INDICATED, SHALL BE COPPER, 900 VOLT, TYPE THW/THHN INSULATION, #12 AWG MINIMUM FOR INTERIOR AND EXTERIOR USE. FOR BRANCH CIRCUITS TYPE MC (METAL CLAD) CABLE MAY BE USED WHERE PERMITTED BY THE NEC AND LOCAL CODES. NO ROMEX OR AC (BX) CABLE WILL BE ALLOWED ON THE PROJECT.
- F. MINIMUM WIRE SIZE SHALL BE NUMBER TWELVE (12) AWG. NO SPLICES SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES. WIRES NUMBER EIGHT (8) AWG AND LARGER SHALL BE STRANDED. WIRES AND CABLES SHALL BE MANUFACTURED BY PIRELLI, ROYAL, TRIANGLE OR EQUIVALENT.

G. THE COLOR CODING SYSTEM LISTED BELOW SHALL BE USED THROUGHOUT THE BUILDING:

SYSTEM	PHASE A	PHASE B	PHASE C	NEUTRAL	GROUND	ISOLATED GROUND
120/208V	BLACK	RED	BLUE	WHITE	GREEN	GREEN/YELLOW
277/480V	BROWN	ORANGE	YELLOW	GRAY	GREEN	GREEN/YELLOW

- H. THE WIRE SIZE INDICATED IN THE HOMERUN SHALL BE USED THROUGH THE CIRCUIT.
- I. PROVIDE DISCONNECT SWITCHES WHERE INDICATED AND AS REQUIRED. SWITCHES SHALL BE OF SIZE, NUMBER OF POLES AND FUSED OR NONFUSED, AS REQUIRED FOR JOB CONDITIONS AND THE NATIONAL ELECTRICAL CODE. ALL SAFETY SWITCHES SHALL BE NEMA I ENCLOSURE "HD" WITH INTERLOCKING COVER AND HANDLE, MANUFACTURED BY SQUARE "D" OR APPROVED EQUAL. PROVIDE NEMA 3R ENCLOSURES WHERE REQUIRED.
- J. PROVIDE STARTERS AND CONTROL WIRING AS INDICATED ON THE DRAWINGS, OR SPECIFIED HEREIN. ALL TEMPERATURE CONTROL WIRING AND COMPONENTS SHALL BE UNDER DIVISION 15.
- K. PROVIDE THERMAL MANUAL MOTOR STARTING SWITCHES FOR FRACTIONAL HORSEPOWER, SINGLE PHASE MOTORS. THE STARTERS SHALL BE SQUARE D COMPANY, CLASS 2510, ALLEN BRADLEY BULLETIN 600, OR APPROVED EQUAL FOR SINGLE SPEED MOTORS. ENCLOSURES SHALL BE NEMA I FOR INTERIOR USE AND NEMA 3R FOR EXTERIOR USE.
- L. THREE PHASE MOTOR STARTERS SHALL BE 3 POLE, FULL-VOLTAGE, MAGNETIC TYPE. ENCLOSURES SHALL BE NEMA I FOR INTERIOR USE AND NEMA 3R FOR EXTERIOR USE. PROVIDE HOA SWITCH WHEN AUTOMATICALLY CONTROLLED, PILOT INDICATING LIGHT, CONTROL TRANSFORMER, AND NOINC AUXILIARY CONTACTS. STARTERS SHALL BE SQUARE D COMPANY, CLASS 8538 AND CLASS 8538 COMBINATION TYPE OR APPROVED EQUAL.

M. WIRING DEVICES SHALL BE ARROW HART, GENERAL ELECTRIC, P & S LEVITON OR HUBBELL:

- WALL SWITCHES: ARROW HART 1991. THREE AND FOUR-WAY SWITCHES SHALL BE OF THE SAME MANUFACTURER AND GRADE.
  - RECEPTACLES: ARROW HART 5362 FOR 20 AMPERES. GFCI SHALL BE #GFC20 RATED 20 AMPERE, 120 VOLT. PROVIDE TAMPER RESISTANT AND MOISTURE RESISTANT TYPE WHERE REQUIRED BY NEC.
  - DIMMERS: 600/1000/1500/2000 WATTS AS REQUIRED BY JOB CONDITIONS. LUTRON 'NOVA' SERIES OR EQUAL.
  - DEVICE PLATES: ARROW HART SWITCH PLATES SI-S6 SERIES. ARROW HART RECEPTACLE PLATES S8. ARROW HART TELEPHONE BLANK PLATES S14.
- N. MOUNT WEATHERPROOF DEVICES IN CAST METAL BOXES WITH GASKETED, SPRING-HINGED LID-TYPE LOCKING COVERS HAVING CORROSION-RESISTANT FINISH.
- O. THE ENTIRE ELECTRICAL SYSTEM SHALL BE SOLIDLY GROUNDED INCLUDING MAIN SERVICE EQUIPMENT, DISCONNECT SWITCHES, WIRING TROUGHS AND PULL BOXES, CONDUIT SYSTEM, OUTLET BOXES, MOTORS, ELECTRIC HEATING EQUIPMENT, LIGHTING FIXTURES, TRANSFORMERS, EMERGENCY SYSTEMS, UPS SYSTEMS, AND FIRE ALARM SYSTEMS.
- P. PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN ALL BRANCH CIRCUITS AND FEEDERS SIZED IN ACCORDANCE WITH THE NEC TABLE 250.112.
- Q. ALL BRANCH CIRCUITS SHALL BE RUN CONCEALED IN EXISTING AND NEW WALLS. CUT AND PATCH EXISTING WALLS AND SURFACES AS REQUIRED.
- R. ALL D.C. WIRING SHALL BE #10 AWG MINIMUM.
- S. GROUND, PHASE AND NEUTRAL CONDUCTORS SHALL BE PIG-TAILED IN OUTLET BOXES OR MULTI-OUTLET ASSEMBLY FOR RECEPTACLES SO THAT GROUND AND ELECTRICAL SERVICE WILL NOT BE DISRUPTED TO OTHER RECEPTACLES ON THE SAME MULTI-WIRE CIRCUIT IF RECEPTACLE IS REMOVED.

**3. SECTION 16400 - SERVICE AND DISTRIBUTION**

- A. COORDINATE ALL SERVICE ENTRANCE WORK WITH THE ELECTRIC UTILITY.
- B. DISTRIBUTE POWER AT 120/208V, 3 PHASE, 4 WIRE, LED LIGHTING, AIR CONDITIONING, ELECTRIC HEATING, MOTOR CIRCUITS, AND 120/208V FOR RECEPTACLES, INCANDESCENT LIGHTS AND SMALL MOTORS.
- C. **PANELBOARDS SHALL BE 120/208 VOLTS, THREE PHASE EMPLOYING BREAKERS MINIMUM 10,000 SYMMETRICAL AIC AT 120 VOLTS. FURNISH PANELBOARDS AS INDICATED ON DRAWINGS E6.0, E7.0 AND E7.1.**
- D. PANELBOARDS SHALL BE FACTORY ASSEMBLED WITH BOLT-ON TYPE CIRCUIT BREAKERS. BUSS SHALL BE ALUMINUM. PROVIDE 50% GROUND BUS BAR. PANELS CONNECTED TO K-RATED TRANSFORMERS SHALL HAVE 200% RATED NEUTRAL BUS BARS.
- E. PROVIDE THREE (3) 3/4 INCH SPARE CONDUITS FROM EACH RECESSED PANEL TO THE CEILING SPACE.
- F. FUSES FOR SERVICE ENTRANCE EQUIPMENT SHALL BE U.L. LISTED CLASS L, J, OR RKI. FUSES FOR FEEDER CIRCUITS AND PANELBOARDS SHALL BE U.L. CLASS RKI FAST-ACTING TYPE. FUSES FOR MOTOR OVERCURRENT, MOTOR CONTROLLER, AND TRANSFORMER PROTECTION SHALL BE DUAL-ELEMENT, U.L. CLASS RKI TIME-DELAY TYPE.
- G. PROVIDE ENERGY EFFICIENT, NEMA TP-1, SELF-COOLED, DRY TYPE TRANSFORMERS OF KVA, PHASE, "K" AND VOLTAGE RATINGS AS INDICATED. TRANSFORMERS 15 KVA AND LESS SHALL HAVE A CLASS F INSULATION, 115 DEGREES C RISE. TRANSFORMERS ABOVE 15 KVA SHALL HAVE CLASS H INSULATION, 115 DEGREE C RISE. PROVIDE FOUR 2-1/2 TAPS BELOW TWO 2-1/2 TAPS ABOVE RATED PRIMARY VOLTAGE. TRANSFORMERS OF 150 KVA AND LESS SHALL BE RATED 45 DB, LARGER TRANSFORMERS SHALL BE RATED 55 DB. NEUTRALS AND NEUTRAL CONNECTIONS OF ALL "K" RATED DRY TYPE TRANSFORMERS SHALL BE 200% OF THE PHASE CONDUCTOR SIZE. TRANSFORMER SHALL BE HEVI-DUTY ELECTRIC COMPANY, GENERAL ELECTRIC, SORGEL, ACME OR HOWARD INDUSTRIES.

**4. SECTION 16500 - LIGHTING**

- A. PROVIDE A COMPLETE LIGHTING FIXTURE AT EACH LOCATION INDICATED ON THE DRAWINGS. FIXTURES SHALL BE SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE ON THE DRAWINGS.
- B. ALL PLASTIC DIFFUSERS SHALL BE 100 PERCENT VIRGIN ACRYLIC (NOMINAL .125 INCH THICK) AND ALL LEXAN DIFFUSERS SHALL BE LEXAN TYPE MR-4000, OR EQUAL.
- C. 8-FOOT TANDEM UNITS MAY BE USED IN LIEU OF 4 FOOT UNITS IN CONTINUOUS ROWS.
- D. THE CONTRACTOR SHALL CONSULT THE CEILING CONTRACTOR AND ARCHITECT'S DRAWINGS FOR APPROVED REFLECTED CEILING PLANS BEFORE ORDERING FIXTURES TO INSURE THAT ALL ARE COMPATIBLE WITH THE CEILING SYSTEM AND PROPERLY LOCATED. VERIFY THAT ADEQUATE CLEARANCE FOR INSTALLATION, MAINTENANCE, AND HEAT DISSIPATION IS AVAILABLE.
- E. PROVIDE A MINIMUM OF TWO (2) GALVANIZED STEEL #12 GAUGE HANGER WIRES (ALTERNATE CORNERS) ON ALL RECESSED FIXTURES.
- F. CONTRACTOR SHALL PROVIDE ADDITIONAL EXIT LIGHTS AND EMERGENCY BATTERY PACK WITH DUAL HEADS AS NEEDED TO MEET FIRE MARSHAL'S WALK-THROUGH AND ACCEPTANCE.
- G. CONNECT EXIT LIGHTS, EMERGENCY BATTERY UNITS AND NIGHT LIGHTS (NL) TO UNSWITCHED PORTION OF LIGHTING CIRCUIT SERVING RESPECTIVE AREA.

**5. SECTION 16700 - COMMUNICATION SYSTEMS**

- A. TELEPHONE SERVICE SHALL BE INSTALLED BY THE TELEPHONE COMPANY.
- B. PROVIDE WALL OUTLETS IN 4" SQUARE 2-1/8" DEEP BOX WITH RAISED SINGLE GANG COVERS EQUIPPED WITH BLANK STAINLESS STEEL DEVICE PLATES. EXTEND 3/4" EMPTY CONDUIT FROM EACH OUTLET TO THE CEILING SPACE AND TERMINATE WITH INSULATED BUSHINGS. PROVIDE NYLON PULL WIRE IN ALL CONDUITS LEFT EMPTY.

**GENERAL NOTES**

1. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF.
2. PROVIDE ALL EMPTY CONDUITS WITH PULL STRING.
3. ALL WIRING OUTSIDE SHALL BE A MINIMUM OF #10 COPPER WITH TYPE 'XHHW-2' INSULATION FOR UNDERGROUND CIRCUIT RUN IN PVC. PROVIDE A #10 COPPER BOND IN ADDITION TO CIRCUIT CONDUCTORS.
4. ALL UNDERGROUND CABLE, PIPE AND CONDUITS SHALL BE DETECTABLE (METALLIC) OR HAVE A DETECTABLE UNDERGROUND DEVICE INSTALLED PER LOCAL CODES.

**rdc.**

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PROJECT  
**CIRCLE K STORES, INC.**  
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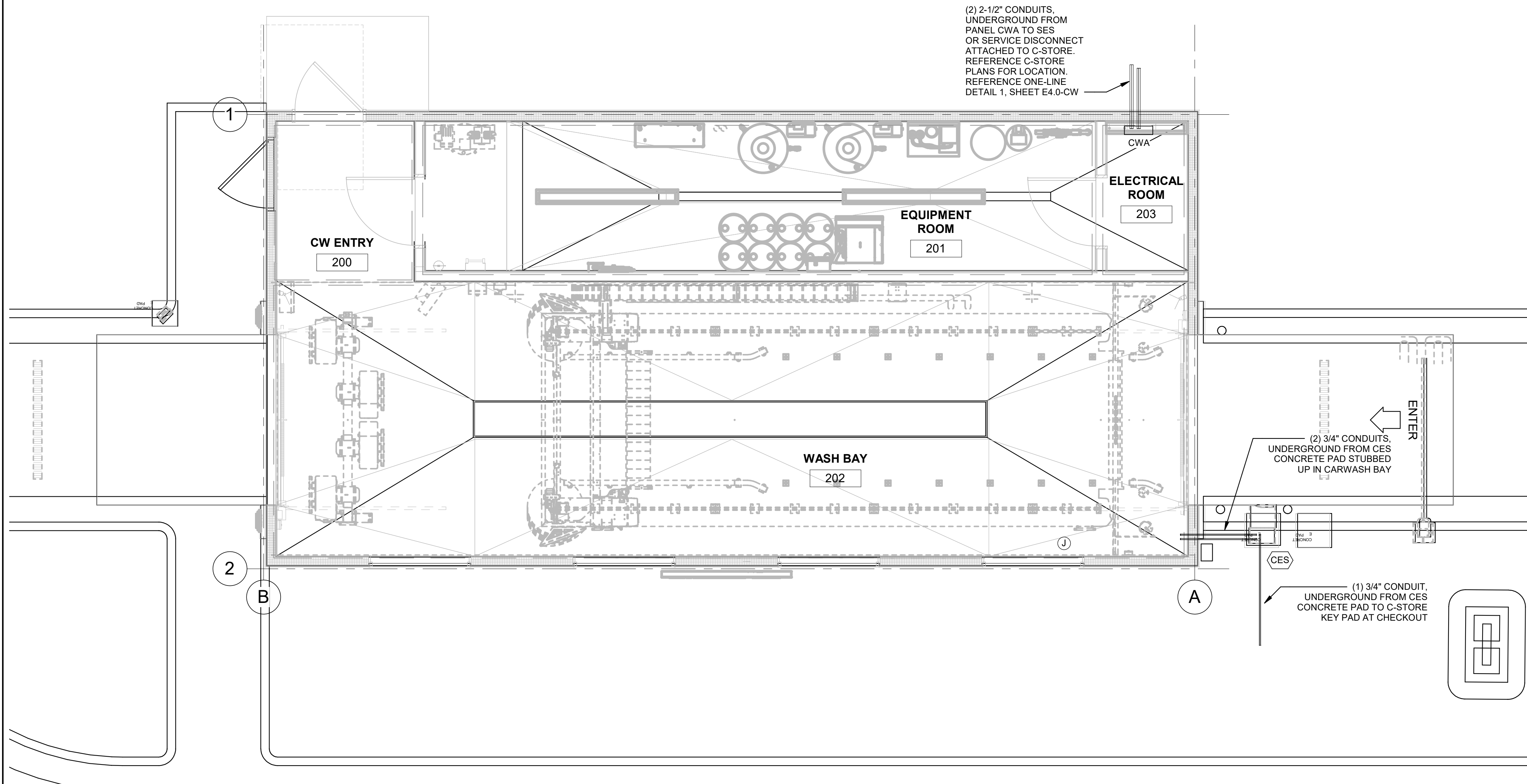
PROTOTYPE CYCLE # R3.2 12/19/22



CIRCLE K STORE  
PROJECT NUMBER: 22130

**ELECTRICAL SITE PLAN**

**E1.0-CW**



**ELECTRICAL SITE PLAN | 1**  
1/4" = 1'-0"

**ELECTRICAL SYMBOLS LEGEND**

(SYMBOLS APPLY ONLY WHEN USED ON DRAWINGS)

SYMBOL	DESCRIPTION
□/□/□	LIGHT FIXTURE (WALL MOUNTED/CEILING MOUNTED)
○	LIGHT FIXTURE
—	LIGHT FIXTURE, NIGHT LIGHT
⊙/⊙	EXIT SIGN, WITHOUT OR WITH INTEGRATED EMERGENCY LIGHTING (WALL MOUNTED/CEILING MOUNTED)
⊙	EMERGENCY LIGHT (WALL MOUNTED/CEILING MOUNTED)
INV	EMERGENCY POWER INVERTER
PE	CEILING MOUNTED LINE VOLTAGE PHOTOCELL SENSOR, LEVITON "PCCSD-W" OR EQUAL.
U	CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR, LEVITON ODC0S-11W WITH POWER PACK OR EQUAL.
\$	STANDARD 20A, SINGLE PHASE SPST TOGGLE SWITCH
\$3	3-WAY SWITCH
\$K	KEYED SWITCH
\$D	DIMMER SWITCH, SINGLE PHASE SLIDING TYPE SWITCH, LUTRON "NOVA-T" SERIES OR APPROVED EQUAL. PROVIDE SEPARATE NEUTRAL FOR EACH DIMMER CIRCUIT.
\$M	MANUAL MOTOR SWITCH
\$OS	SINGLE POLE OCCUPANCY SENSOR SWITCH
\$OS2	DOUBLE POLE OCCUPANCY SENSOR SWITCH
⊕	STANDARD 20A, 120V 1PH GROUNDING TYPE SIMPLEX RECEPTACLE
⊕	STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE
⊕	STANDARD 20A, 120V 1PH GROUNDING TYPE QUADRUPLX RECEPTACLE
⊕	STANDARD 20A, 120V 1PH GROUNDING "GROUND FAULT INTERRUPTER" GFI RECEPTACLE
⊕	STANDARD 20A, 120V 1PH ISOLATED GROUND TYPE DUPLEX RECEPTACLE, ORANGE IN COLOR
⊕	STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE MOUNTED IN FLUSH FLOOR OUTLET BOX
⊕	STANDARD 20A, 120V 1PH GROUNDING TYPE QUADRUPLX RECEPTACLE MOUNTED IN FLUSH FLOOR OUTLET BOX
▲	SPECIAL RECEPTACLE - VERIFY NEMA CONFIGURATION WITH INSTALLED EQUIPMENT MANUFACTURER REQUIREMENTS.
J	JUNCTION BOX. SIZED BY THE CONTRACTOR PER ACTUAL NUMBER OF CONDUITS AND / OR CONDUCTORS PASSING THROUGH. (WALL MOUNTED/CEILING MOUNTED)
⊕	CEILING MOUNTED RECEPTACLE, STANDARD 20A, 120V 1PH GROUNDING TYPE DUPLEX RECEPTACLE
⊕	DISCONNECT SWITCH, AMPS, POLES AND FUSE SIZE AS SHOWN (FUSE SIZE CALLED OUT IF REQUIRED)
—	FLUSH MOUNTED PANELBOARD, REFERENCE PANEL SCHEDULE FOR RATINGS AND COMPONENTS
—	SURFACE MOUNTED PANELBOARD, REFERENCE PANEL SCHEDULE FOR RATINGS AND COMPONENTS
SD / SD-	SMOKE DETECTOR / DUCT SMOKE DETECTOR
⊕	HORN / STROBE, CANDELA AS INDICATED, COORDINATE WITH FIRE ALARM PLANS
▼	TELEPHONE OUTLET WITH (2) RJ45 PORTS U.O.N., PROVIDE 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED
▼	DATA OUTLET WITH (2) RJ45 PORTS U.O.N., PROVIDE 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED
▼	COMBINATION TELEPHONE / DATA OUTLET WITH (4) RJ45 PORTS U.O.N., PROVIDE (2) 3/4" TO ACCESSIBLE CEILING SPACE OR AS OTHERWISE INDICATED
⊕	SECURITY CAMERA BY OTHERS.

**ABBREVIATIONS**

a, b, c	LOWER CASE LETTERS INDICATE SWITCHING CONFIGURATION	LCU	LIGHTING CONTROL UNIT
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	REC	REFRIGERATION
C	CONDUIT	REC	REFRIGERATION
CCT	CIRCUIT	CONTRACTOR	CONTRACTOR
CF	CEILING FAN	RC	REFRIGERATION CONTRACTOR
CW	CASH WRAP	RH	RADIANT HEATER
EC	ELECTRICAL CONTRACTOR	SC	SECURITY CAMERA
EF	EXHAUST FAN	TR	TAMPER RESISTANT
ETR	EXISTING TO REMAIN	TYP	TYPICAL
EWC	ELECTRIC WATER COOLER	UH	UNIT HEATER
G	GROUND	UNO	UNLESS NOTED
GFEP	GROUND FAULT EQUIPMENT PROTECTION	OTHERWISE	OTHERWISE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	WH	WATER HEATER
IG	ISOLATED GROUND	WP	WEATHER PROOF
		WR	WEATHER RESISTANT

SYMBOL	PART NUMBER	DESCRIPTION	POWER REQ. 120 VAC 1PH	POWER REQ. 208/230 VAC 1PH	POWER REQ. 230 VAC 3PH	CONTROL WIRING CONDUCTOR	INLET CONNECTION	OUTLET CONNECTION	WATER USAGE GPM	AIR CFM PSI MIN	ESTIMATED WEIGHT (OPERATING / SHIPPING)
Totals: Disconnect data, not verified per			90	40	400						
AC	3650-1907	AIR COMPRESSOR, 5 HP 60 GALLON TANK-IN-RESERVOIR, NEMA 1, WITH AIR DRAIN 120V	10		30			3/4" NPT			500
BSG	GU640 9150-0416ES GU602 9150-0417-MS 8375-2675	BRUSH SIDE SPLASH GUARDS, DRIVER AND PASSENGER SIDE, (RED, WHITE, CUSTOM)									On Genly
BWD	GU630 9150-0417	BAY WASH DOWN ASSEMBLY, GUN & HOSE						3/4" NPT			
CB	3650-3903	CLEARANCE BAR-RETRACTABLE, DRIVER SIDE									
CES		C-START, UNITEC, CAR WASH ENTRY SYSTEM	10			24 VAC, 18 G, 12 COND CAT5E CABLE INTERCOM 22G, 4 COND SHLD					95
CPD	7040-4161	CPO CONTROLLER	(SUPPLIED WITH GANTRY)			FACTORY INSTALLED					
CW	GU1010	CHOICEWASH XT WITH INJECTOR SYSTEM			75					12 CFM @ 90 PSI	3400
DRB	SU050 9150-0444 8375-2685	DRIVE THROUGH ROCKER BLASTERS						3/4" BARB	28 GPM @ 200 PSI (1)		
DR	7030-4142	DRIVER CONTROL BOX -FS40PS40D	15			24 VAC, 18 G, 2 COND					
DT	GU4220 GU4225 GU4240 GU4252	DRIVER TIMER, SHROUD & 4 TALL STAND 0775-0017, 0575-0012, 5430-2207				24 VAC, 18 G, 3 COND					
EC	SU4310	ENERGY CHAIN FEED SYSTEM OPEN									
EP		ELECTRICAL PANEL (NOT SUPPLIED BY MARK VII)									
ET		ENTRANCE TIMER LED				24 VAC, 18 G, 3 COND					
FD	GU125 7030-7086	FS-400 HP FREESTANDING DRYER WITH SIDE DOWN CHUTES		150		24 VAC, 18 G, 3 COND					1640
FR	3650-3811	RO FINAL RINSE PUMP-2 HP, 150 PSI Max		20					19 GPM @ 50 PSI		65
GD		BAYWATCH INTELLIWATCH PREMIUM DOOR SYSTEM		20		24VAC 18G, 4 COND SHLD, 10 COND SHLD					
GR	SU4120 9150-0286	16'-0" GUIDE RAILS, SST LOW PROFILE									
GRP	6605-0000	GUIDE RAIL SAFETY POSTS									
HEC	GU1010 9150-0282	HIGH ENTRY CURVED GUIDE RAILS									
JB	7040-4010	IN BAY JUNCTION BOX	(SUPPLIED WITH GANTRY)								
M7+	SU1810 7040-4316	MARK VII +, REMOTE MONITORING SYSTEM				24VAC POWER/RS232 FACTORY INSTALLED					
MD	0035-1586	MAIN DISCONNECT	(SUPPLIED WITH GANTRY)								
MS	SU4080 9150-0366	MERCHANDISING SIGN - OFF BOARD WITH INTERFACE ENCLOSURE	15			24 VAC, 18 G, 8 COND					
PP	GU1130, 8, 8	CHOICEWASH XT PUMPING PLANT STATION-20 HP/250 CAT		75		24 VAC, 18 G, 25 COND			28 GPM @ 50, 80 PSI (1)	1.5 CFM @ 90 PSI	775
RM	GU1010 3950 3953 3950- 3954	REFLECTIVE MARKERS W/ADHESIVE									
RO	3650-3803	REVERSE OSMOSIS UNIT - PURICLEAN PC-3000 GPD WITH FLOOR STAND		20		2X 1" WATER LINE W/ FPT			20 GPM @ 30 PSI		800
RP	3650-4136	RO REJECT CAPTURE PUMP, 1 1/2-HP (CJ69P)	20						35 GPM @ 50 PSI		65
RU	3650-4024	RECLAIM UNIT- PURWATER 30 GPM PW1005M40	20	30		24VAC 18G, 4 COND, 1" SCH80 14G, 4 COND FLOOR CONTROL(S) (1) 1/2" COND	(3) 2" SUCTION (1) 1-1/2" WATER COND FLOOR CONTROL(S) (1) 1/2" COND	(1) 1-1/2" WATER COND FLOOR CONTROL(S) (1) 1/2" COND	30 GPM @ 45, 45 PSI		700
SF	5280-1050	SPOTFREE STORAGE TANK, 300 GAL, 34.5" DIA X 82" TALL						3/4" BARB			Operating 2505, shipping 40
SFR	5280-1050	SPOTFREE REJECT STORAGE TANK, 300 GAL, 34.5" DIA X 82" TALL						3/4" BARB			Operating 2505, shipping 40
TK		TRACK-GANTRY-32' LOW PROFILE									
UC	SU0010 6535-2093	UNDERCARRIAGE WASH MANFOLD W/PLAT COVER						3/4" NPT	17 GPM @ 50- 80 PSI (1)		
UCP	SU0070 9150-0368	UNDERCARRIAGE PHOTO EYES- SENSORS RECEIVER & TRANSMITTER, CABLES & ENCLOSURES				24 VAC 18 G, 5 COND					
WS	5220-4009	WATER SOFTENER W/BRINE TANK, S- 151 B SINGLE	20				1 1/2" NPT	3/4" DRAIN	40 GPM @ 20 PSI		1130

CAR WASH VENDOR EQUIPMENT LIST | 3  
N.T.S.

NOTE:  
ALL ELECTRICAL EQUIPMENT IN CAR  
WASH SHALL BE NEMA-3R RATED.  
WASH BAY LIGHTING FIXTURES TO BE  
WET LOCATION RATED.

GENERAL NOTES

- EXTERIOR BUILDING CIRCUITING TO BE A MINIMUM #10 AWG.
- NO OUTLET RECEPTACLES ALLOWED IN CAR WASH BAY.
- ALL CONDUITS TO BE BOTTOM FED IN THE WASH BAY AND SUPPORTED 1/2" AWAY FROM FINISHED WALLS.
- ALL JUNCTION BOXES IN THE WASH BAY ARE TO BE FIBERGLASS.

KEYNOTES

- PROVIDE 1" CONDUIT FROM CARWASH EQUIPMENT ROOM TO SECURITY MONITORING STATION. VERIFY EXACT LOCATION OF MONITORING STATION.
- PROVIDE CONDUIT AND BOX FOR SURVEILLANCE TELEVISION.
- PROVIDE 1" CONDUIT FROM SECURITY CAMERAS TO CARWASH BAY EQUIPMENT ROOM. VERIFY LOCATION WITH PROJECT MANAGER.
- PHOTOELECTRIC EYES CONNECTED TO EXIT DOOR CONTROL BOX. PROVIDED AND INSTALLED BY OVERHEAD DOOR INSTALLER. VERIFY CONTROL BOX LOCATION WITH DOOR INSTALLER.
- JUNCTION BOX FOR EXTERIOR PHOTOELECTRIC EYE. PHOTOELECTRIC EYE PROVIDED WITH DOOR CONTROLLER.
- PROVIDE 120-VOLT POWER FOR OVERHEAD DOOR. (EMERGENCY OPEN/CLOSE) DURING INSTALLATION REMOVE CORD AND PLUG AND HARD WIRE THE DEVICE ONLY. TYPICAL FOR ENTRY AND EXIT DOORS.
- PROVIDE 3/4" CONDUIT FROM EACH SIDE OF THE CARWASH BAY TO MAIN CARWASH PANEL FOR SIDE ULTRASONICS. LOCATE 23 FEET FROM ENTRANCE END OF BAY. VERIFY LOCATION WITH VENDOR (RYKO).
- PROVIDE POWER AND ASSOCIATED WIRING FOR CES. VERIFY WIRING REQUIREMENT WITH OWNER.
- PROVIDE JUNCTION BOX FOR SECURITY CAMERA. ROUTE RIGID CONDUIT BETWEEN SECURITY CAMERA JUNCTION BOXES.
- PROVIDE JUNCTION BOX AND PULL STRING IN 3/4" GRC FOR SYSTEM WIRING TO TREADABLE SENSOR PAD FROM CARWASH BAY JUNCTION BOX.
- PROVIDE HORIZONTALLY MOUNTED RECESSED OUTLET BOX ASSEMBLY WITH DUPLEX GFI RECEPTACLE AND CLEAR "IN USE" WEATHERPROOF COVER. ARLINGTON INDUSTRIES DBH SERIES OR APPROVED EQUAL. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.

**rdc.**

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PROJECT  
**CIRCLE K  
STORES, INC.  
DET CW  
ANGIER,  
NC**

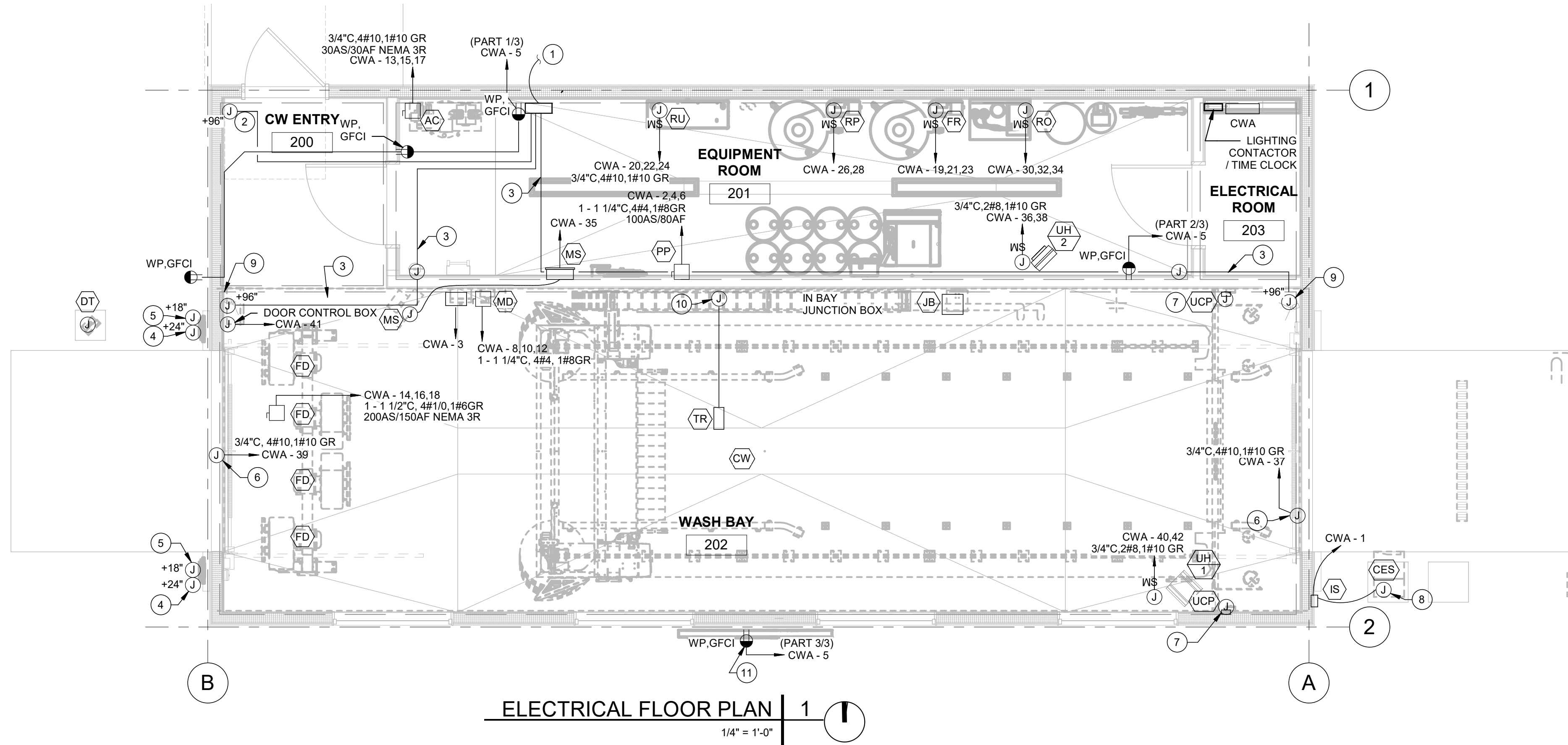
9706 KENNEBEC CHURCH  
ROAD,  
ANGIER, NC  
PROTOTYPE CYCLE # R3.2 12/19/22



CIRCLE K STORE  
PROJECT NUMBER: 22130

ELECTRICAL  
FLOOR PLAN

E2.0-CW



ELECTRICAL FLOOR PLAN | 1  
1/4" = 1'-0"

NOTE:  
ALL ELECTRICAL EQUIPMENT IN CAR  
WASH SHALL BE NEMA-3R RATED.  
WASH BAY LIGHTING FIXTURES TO BE  
WET LOCATION RATED.

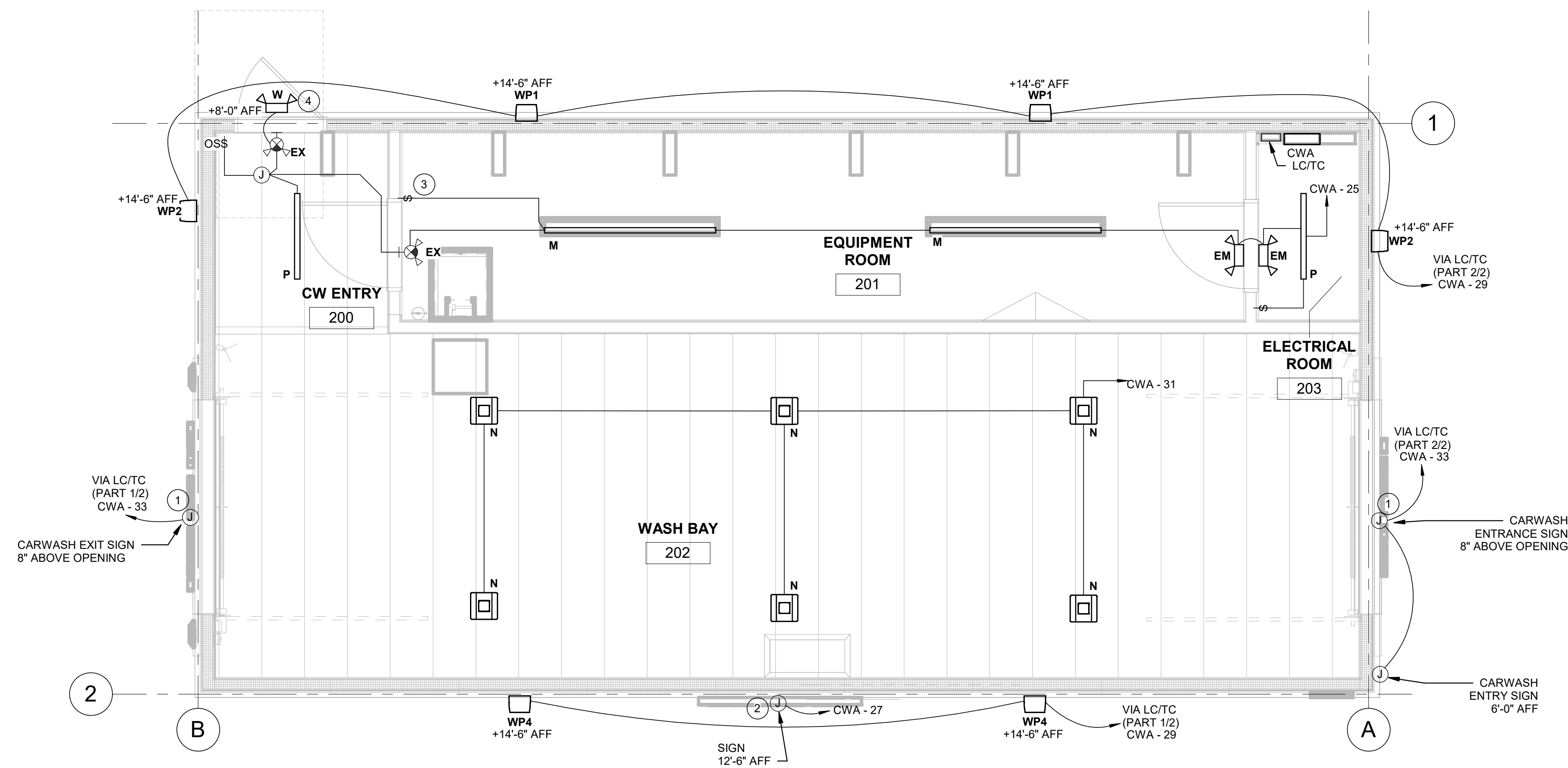
**LIGHTING GENERAL NOTES**

- A. THE EXIT, EMERGENCY AND NIGHT LIGHT FIXTURES SHALL NOT BE SWITCHED.
- B. EXTERIOR BUILDING CIRCUIT MINIMUM WIRE SIZE SHALL BE #10 AWG CU.
- C. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF RATED.
- D. ALL EMERGENCY EQUIPMENT SHALL BE LISTED TO UL924 AND BE INSTALLED PER NEC 700.

**KEYNOTES**

1. PROVIDE JUNCTION BOX 8" ABOVE DOOR FOR CARWASH ENTRANCE AND EXIT SIGNS. VERIFY EXACT LOCATION. PROVIDE 24-VOLT AC TRANSFORMER AND LOW VOLTAGE WIRING TO SIGNAGE VIA LIGHTING CONTACTOR AND TIME CLOCK.
2. RECEPTACLE FOR OPTIONAL EXTERIOR "CIRCLE K" SIGN. VERIFY EXACT MOUNTING LOCATION WITH ARCHITECTURAL ELEVATIONS.
3. PROVIDE WATT STOPPER W2000H OCCUPANCY SENSOR AND MAKE CONNECTION TO LIGHTING IN THIS ROOM.
4. EMERGENCY BATTERY PACK (EBU1) LOCATED INSIDE OF BUILDING FOR EMERGENCY EGRESS LIGHT ON EXTERIOR OF BUILDING ABOVE DOOR.

CARWASH LIGHTING FIXTURE SCHEDULE									
ALL LIGHTING FIXTURES ARE SUPPLIED BY CIRCLE K, INSTALLED BY THE ELECTRICAL CONTRACTOR									
TYPE	ITEM NAME	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	VOLTAGE	COMMENTS	COUNT
EM	INTERIOR LIGHTING	LED EMERGENCY DUAL HEAD	LIGHTALARMS	LCA-2LED	LED	12 W	120 V		2
EX	INTERIOR LIGHTING	LED EXIT SIGN / EMERGENCY LIGHT COMBO	LIGHTALARMS	UQLXN500X-2LED	LED	4 W	120 V		2
M	INTERIOR LIGHTING	8' LED LINEAR FIXTURE	CREE	LS8-120L-950-R-UL-10V	LED	96 W	120 V		2
N	INTERIOR LIGHTING	DIRECT MOUNT FLAT LENS CANOPY FOR CARWASH	CREE	CPY250- B-DM-F-E-UL-WH-57K	LED	145 W	120 V	WET LOCATION RATED	6
P	INTERIOR LIGHTING	4' LED LINEAR FIXTURE	CREE	LS4-60L-950-R-UL-10V	LED	45 W	120 V		2
WP1	EXTERIOR SITE LIGHTING	EXT. WALL PACK	CREE	XSPW-B-WM-2ME-2L-40K-UL-XX (SET @ 1.0V)	LED	25 W	120 V		2
WP2	EXTERIOR SITE LIGHTING	EXT. WALL PACK	CREE	XSPW-B-WM-4ME-2L-40K-UL-XX (SET @ 1.0V)	LED	44 W	120 V		2
WP4	EXTERIOR SITE LIGHTING	EXT. WALL PACK	CREE	XSPW-B-WM-4ME-8L-40K-UL-XX	LED	44 W	120 V		2
W	EMERGENCY LIGHTING	WET-LISTED EMERGENCY REMOTE DUAL HEAD	LIGHTALARMS	CAM-SD-XX	LED	2 W	120 V	(2) 1W HEADS GRAY FINISH - 90 MINUTE REMOTE BATTERY BACKUP	1



ELEC LIGHTING PLAN | 1 | 1/4" = 1'-0"

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**CIRCLE K  
STORES, INC.  
DET CW  
ANGIER,  
NC**

9706 KENNEBEC CHURCH  
ROAD,  
ANGIER, NC

PROTOTYPE CYCLE # R3.2 12/19/22



CIRCLE K STORE

PROJECT NUMBER: 22130

LIGHTING PLAN

**E3.0-CW**

PANELBOARD CWA		Bus Rating: 400 A Voltage: 208Y/120 V System: 3Ø, 4W Mounting: Cabinet Status: New Nema Rating: 3R Trim: Door-In-Door Feed Thru Lugs: NO				Main Rating Upstream: 400 A Mains Type: M.C.B. A.I.C. Rating: 65,000 A Fully / Series: Series Branch Breaker Type: Bolt-on Feet Type: Bottom Terminations: 75°C CU				Location: DIST. DP Busbar Material: CU Ground Busbar: Yes Neutral Busbar: 100% IG Ground Busbar: No Skirt Type: None Sections: 1					
Furnished by Owner, Installed by EC															
CCT No.	Load Code	Load Description	Notes	Brkr Size	Poles	A	B	C	Poles	Brkr Size	Notes	Load Description	Load Code	CCT No.	
1	3	CODE ENTRY BOX (CES)		20 A	1	0.96	7.13					CHOICEWASH PUMP PLANT STATION - 20HP (PP)	4	2	
3	11	DRYER CONTROL BOX (DR)		20 A	1		0.03	7.13				CHOICEWASH XT WITH INJECTOR SYSTEM (CW) (MD)	4	4	
5	2	CONVENIENCE RECPTS		20 A	1			9.01					6	8	
7	--	SPACE											8	10	
9	--	SPACE						9.01					10	12	
11	--	SPACE											12	14	
13						2.10	0.00					FS-400 HP DRYER WITH SIDE DOWN CHUTES (FD) - 4 EA 10HP MOTORS	14	16	
15	4	AIR COMP 5 HP (AC)		30 A	3		2.10	0.00					16	18	
17						0.73	0.91						18	20	
19													20	22	
21	4	FINAL RINSE BOOSTER PUMP (FR)		20 A	3		0.73	0.91				RECLAIM UNIT - PURWATER (RU)	22	24	
23													24	26	
25	10; 1	LTG EQUIPMENT/ELEC ROOM		20 A	1	0.39	1.44					RO REJECT CAPTURE PUMP (RP)	26	28	
27	2	LTG CONTACTOR/TIMER (L.C.TC)		20 A	1		0.36	1.44					28	30	
29	10	EXT. SECURITY WALL PACKS		20 A	1			0.19	0.79			REVERSE OSMOSIS UNIT (RO)	30	32	
31	1	WASH BAY LIGHTING		20 A	1	0.87	0.79						32	34	
33	10	EXIT/ENTRY SIGNS		20 A	1		1.41	0.79					34	36	
35	3	MERCHANSING SIGN (MS)		2	20 A	1		1.00	2.50			UH - 2	36	38	
37	4	ENTRANCE GARAGE DOOR 1/2HP		30 A	1	2.35	2.50						38	40	
39	4	EXIT GARAGE DOOR 1/2HP		30 A	1		2.35	3.75				UH - 1	40	42	
41	3	GARAGE DOOR CONTROLLER		2	20 A	1		0.18	3.75				42		
Total Connect Load:						29.18	30.01	29.19							
Total Amps:						243 A	250 A	243 A							
Demand Loads May Vary From Connected Loads Because of Demand Factors															
Load Codes	Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals										
0	Lighting - Non-Continuous	0.00	0.00%	0.00											
1	Lighting - Continuous	1.26	125.00%	1.58	Total Conn. Load: 88.39										
2	Receptacles	1.26	100.00%	1.26	Total Est. Demand: 89.11										
3	Special Loads	2.14	100.00%	2.14	Total Conn.: 245 A										
4	Motors	82.10	100.00%	82.10	Total Est. Demand: 247 A										
5	Kitchen (Commercial)	0.00	0.00%	0.00											
6	Heating	0.00	0.00%	0.00											
7	Cooling	0.00	0.00%	0.00											
9	Computer Outlets	0.00	0.00%	0.00	Spare Capacity: 153 A										
10	Exterior Lighting	1.60	125.00%	2.00	Spare Capacity Percent: 62										
11	Miscellaneous - Continuous	0.03	125.00%	0.04											
12	Modular Furniture Outlets	0.00	0.00%	0.00											

BRKR AMPS	WIRE SIZE					
	12	10	8	6	4	3
15-20	PHASE	12	10	8	6	4
	GROUND	12	10	8	6	4
25-30	PHASE	10	8	6	4	3
	GROUND	10	8	6	4	3
35-50	PHASE	8	6	4	3	2
	GROUND	10	8	4	4	4
60	PHASE	6	4	3	2	1
	GROUND	10	6	6	4	4
70	PHASE	6	4	3	2	1
	GROUND	8	4	4	3	2
80-90	PHASE	4	3	2	1	1/0
	GROUND	8	6	4	4	3
100	PHASE	3	2	1	1/0	2/0
	GROUND	8	6	4	4	3

PER NEC 250.122(B)

Wire Size	Length	Temperature	Material	Length	
120 VOLT	#12	#11	#8	#6	
	#10			#8	
	#8			#6	
1-5 AMPS	200 FT.	325 FT.	490 FT.	770 FT.	
	6-10 AMPS	100 FT.	160 FT.	245 FT.	385 FT.
	11-15 AMPS	70 FT.	110 FT.	165 FT.	255 FT.
277 VOLT	#12	#10	#8	#6	
	#10			#8	
	#8			#6	
	#6			#4	
1-5 AMPS	480 FT.	760 FT.	1170 FT.	1865 FT.	
6-10 AMPS	240 FT.	380 FT.	585 FT.	930 FT.	
11-15 AMPS	160 FT.	250 FT.	390 FT.	620 FT.	

- ### GENERAL PANELBOARD NOTES
- CIRCUIT BREAKERS IN PANELBOARDS SHALL BE U.L. LISTED SERIES RATED WITH SPECIFIED 65K AIC UPSTREAM CIRCUIT BREAKER AND DOWNSTREAM 10K AIC RATED BRANCH CIRCUIT BREAKERS.
  - PROVIDE A PERMANENT LABEL READING "CAUTION - SERIES RATED SYSTEM 65K, "X" AMPS AVAILABLE - IDENTIFIED (LABELED) REPLACEMENT COMPONENTS REQUIRED. (REFER TO SHORT CIRCUIT CALCULATIONS FOR ACTUAL AMPS TO BE LABELED).
  - CIRCUIT BREAKERS SHALL BE A BOLT-ON TYPE, U.L. LISTED SERIES-RATED COMBINATION FROM PUBLISHED COMBINATION LISTINGS.

- ### PANELBOARD CIRCUIT NOTES
- TERMINATE GROUND ON ISOLATED GROUND BUS.
  - INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-OFF FOR MAINTENANCE).
  - INSTALL LOCKING DEVICE ON BREAKER PER NEC (LOCK-OFF FOR CRITICAL LOAD).
  - GFI BREAKER FOR PERSONNEL PROTECTION (5MA).
  - REFER TO ONE-LINE DIAGRAM FOR CONDUCTOR SIZES.
  - PROVIDE LOCK-OFF DEVICE TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS PER NEC.
  - FIRE ALARM CIRCUIT. PROVIDE RED MARKING AND LABEL "FIRE ALARM CIRCUIT CONTROL" ON BREAKER.
  - OPTIONAL EQUIPMENT: REVISE TO FILLER SPACE IF NOT USED ON SITE.
  - NON-COINCIDENTAL LOAD PER NEC 220.60. ELECTRICAL LOAD IS NOT SHOWN IN PANELBOARD SCHEDULE.



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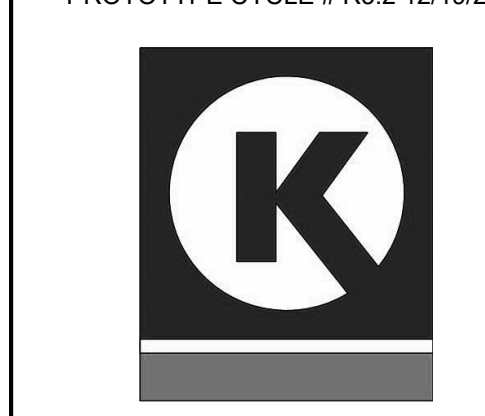
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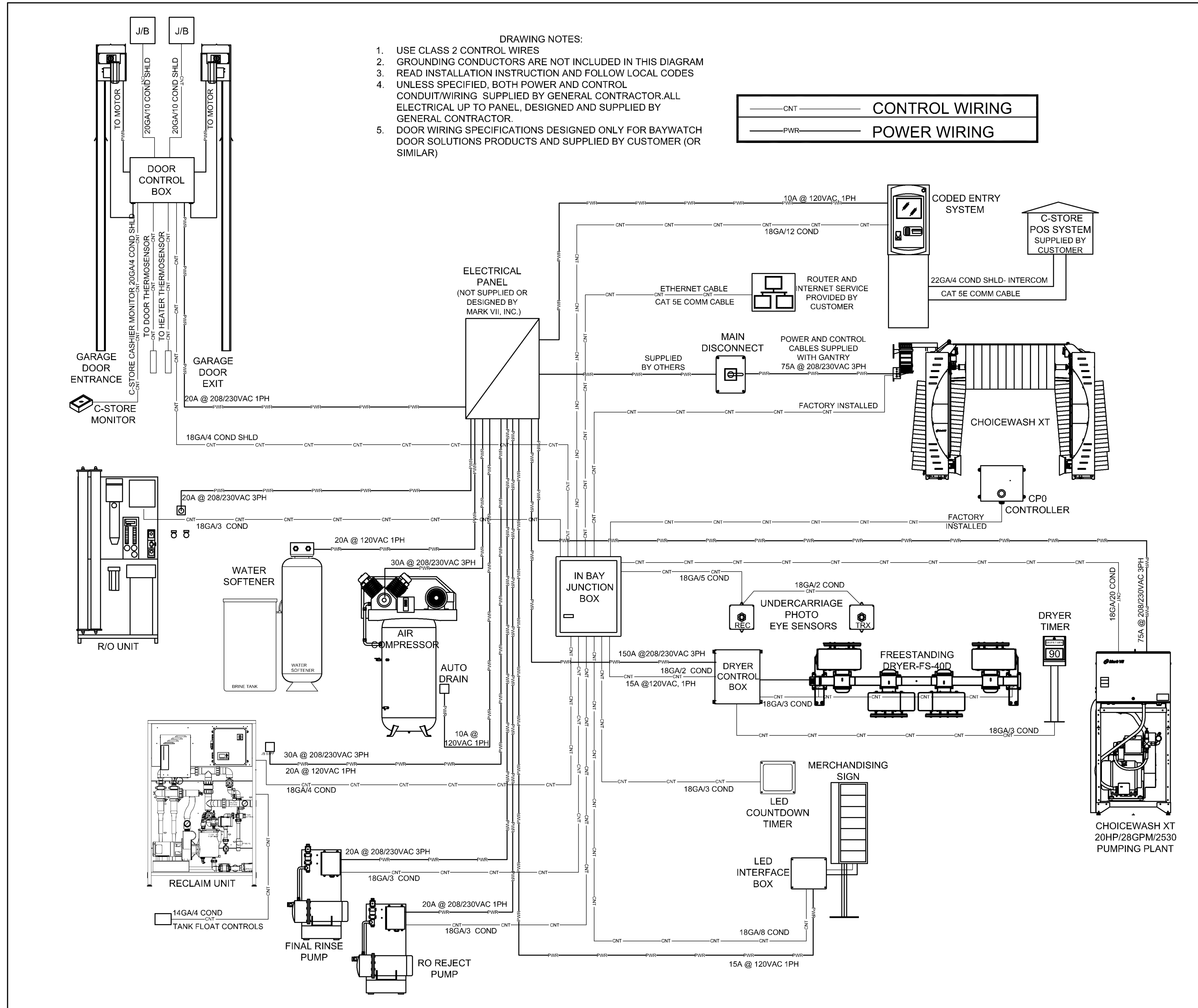
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**DET CW**  
**ANGIER, NC**  
9706 KENNEBEC CHURCH ROAD, ANGIER, NC  
PROTOTYPE CYCLE # R3.2 12/19/22



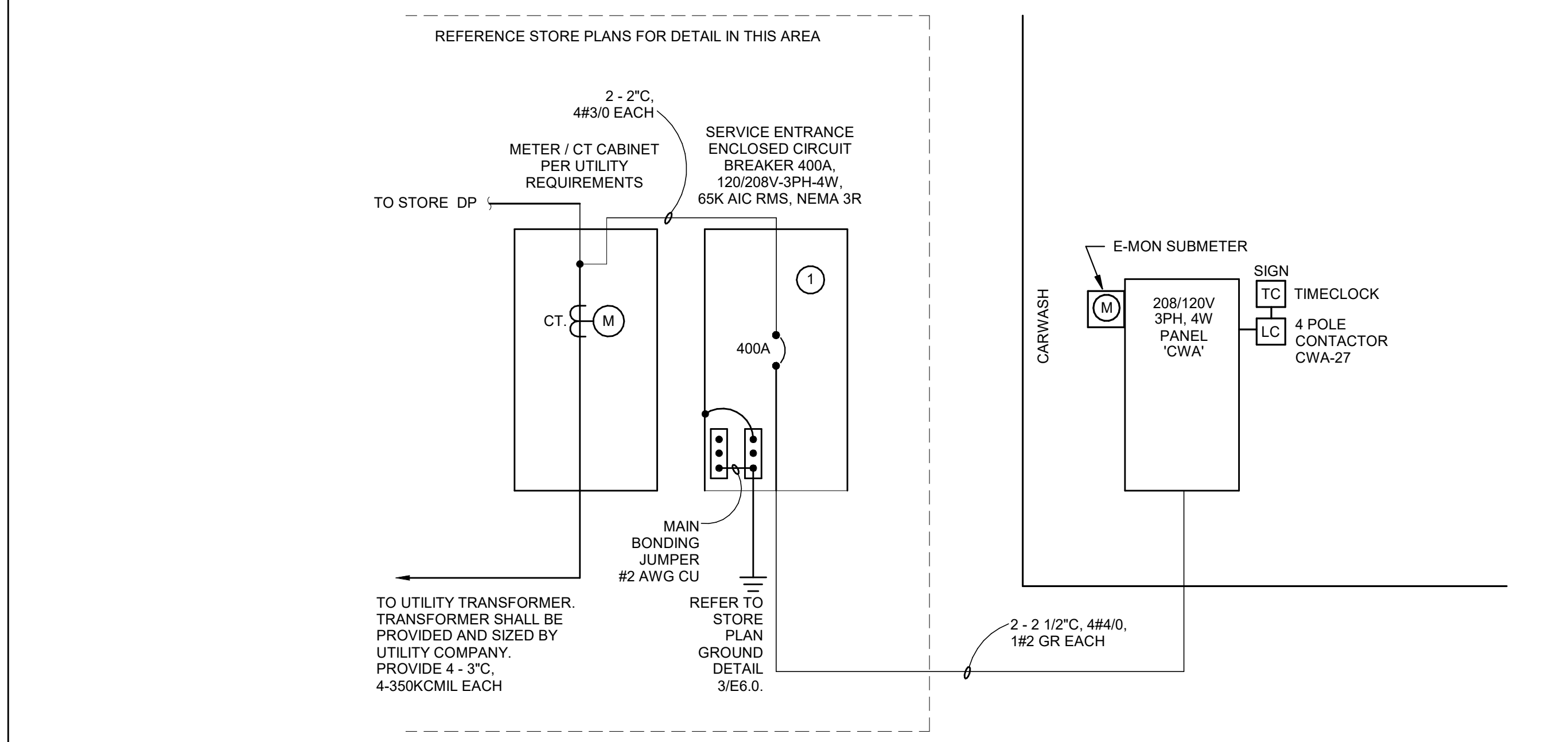
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PANEL SCHEDULES, RISER AND DETAILS

E4.0-CW



CHOICEWASH XT CONTROL WIRING AND POWER DIAGRAM | 2  
N.T.S.



RISER DIAGRAM CAR WASH | 1  
N.T.S.